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AUTHOR Lee, Jo Ann
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ABSTRACT

The Chinese system of higher education is examined and compared with the U.S. system and, in particular, with the California higher educational system. Attention is directed to the structure of the public and private college and university systems in Taiwan, requirements on college and university entrance examinations and curricular offerings in both countries, the accreditation process for Chinese and American colleges and universities, standards regarding teacher certification and educational preparation, the requirements for advancement or promotion in teacher rank and the comparative salaries at various institutions, the impact of vocational/technical education in the total educational master plan, and the impact of education for the handicapped and the extent to which such students are incorporated into the educational mainstream. An overview of the preschool, elementary, and secondary levels is included. Study approaches included a review of the literature on the historical, current, and future aspects of higher education in the Republic of China; visits to various private and public colleges and universities in Taipei City vicinity; visits to divisions of the Ministry of Education; and interviews with administration and teachers. Similar steps were followed for the United States and California. The literature review, historical perspectives, information concerning specific legislation affecting education, and perspectives on international education and international exchange programs are included. A bibliography and information on requirements for college entrance and curricular offerings in the California State University/College System are appended. (SW)

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A COMPARATIVE STUDY OF THE
CHINESE AND AMERICAN
HIGHER EDUCATIONAL SYSTEMS

Presented to
THE PACIFIC CULTURAL FOUNDATION
Taipei, Taiwan
The Republic of China

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by

Jo Ann Lee

Pasadena City College
Pasadena, California

In fulfillment of the requirements of a
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CHAPTER 1

INTRODUCTION

In December 1979, a Sisterhood Agreement was entered into between Pasadena City College, Pasadena, California, and Shih Chien College, Taipei, Taiwan, Republic of China. The Agreement stated the purpose of the sister relationship was "the pursuit of educational ideals, the development of both schools, and the promotion of mutual understanding and cultural exchange."[1] For Pasadena City College, this was the first of two such agreements entered into with Chinese educational institutions, the other being with Taichung Institute of Commerce, Taichung, Taiwan; for Shih Chien College, its second such agreement with an American institution.

A stipulation of the Sisterhood Agreement was that both schools make an effort to carry out "educational, cultural and personnel exchanges." Beginning in the Spring of 1980, plans were initiated to implement the first teacher exchange program between the two institutions. While Pasadena City College had participated in exchange programs with European colleges and universities, this was its first experience with an Asian institution.

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[1] Agreement of Sisterhood dated December 14, 1979.

Thus, in September of 1980, an instructor from Pasadena City College and an instructor from Shih Chien College were exchanged for the 1980-1981 school year. Both were full-time faculty members teaching business subjects, both having had extensive teaching experience within their respective institutions and countries.

The purpose of the teacher exchange program is to provide not only for exchange of educational philosophies and practices between the two colleges but also for the exchange of cultural ideologies. The enculturation process must necessarily be a personal growth experience for the individual exchange teachers; however, the exchange of educational philosophies encompasses not only the exchange teachers themselves but also the two participating colleges and their respective faculties and students. Other educational institutions and the governing educational agencies of the two countries will undoubtedly benefit vicariously from the knowledge gained directly by the exchange teachers and their colleges.

Although the presidents of both Pasadena City College and Shih Chien College visited each others' countries and colleges and attempted to make the best arrangements possible to insure the success ofthe initial exchange of teachers, neither could anticipate the "cultural shock" both teachers might experience in their new educational and cultural surroundings.

Thus, to assist in carrying out future exchange programs between Pasadena City College and Shih Chien College, as well as with other American and Chinese colleges, an examination and analysis was made of the educational systems--and, indirectly, of the cultures--in which the exchange teachers are and will be a part.

Statement of the Problem

This study attempts to examine the Chinese system of higher education so that a comparison can be made with the higher educational system of the United States and, in particular, with the California higher educational system.

The results of such a study, based on experiential knowledge of and research by an American exchange teacher to the Republic of China, would provide a valuable resource tool concerning the expectations, responsibilities, and role of exchange teachers. Such a study is necessary because of the diversity of the educational structures, cultures, and environments of the two countries.

California's higher educational system was selected as the basis for comparison because it is one of the largest systems in the United States and could be compared easily for purposes of this study. California's higher educational system is also fairly representative of those within the United States.

Objectives of the Study

The objectives of this study were as follows:

1. To learn about the structure of the public and private college and university systems in Taiwan, the Republic of China, in comparison with those in the United States, especially that in California.

2. To learn about the student population in terms of requirements on college and university entrance examinations, curricular offerings.

3. To learn about the accreditation process for Chinese and American colleges and universities: the evaluative criteria, the re-evaluation process, the composition of the governing body, etc.

4. To determine the standards regarding teacher certification and educational preparation.

5. To determine the requirements for advancement or promotion in teacher rank and the comparative salaries at the various institutions

6. To learn the impact of vocational-technical education in the total educational master plan

7. To determine the impact of education for the handicapped and the extent to which such students are incorporated into the educational mainstream.

BACKGROUND AND SIGNIFICANCE

> Education in developing societies plays an important role. A higher literacy rate in turn encourages technical and economic development in a society. In addition, it aids in integrating the people in that society with its government and provides opportunity for greater socialization among the people with a common identity and goal toward modernization and growth.[2]

In October 1976, six American colleges--all public two-year community colleges--formed the Community Colleges for International Development, Inc. (known as The Cooperative), with a goal of "developing viable international linkages throughout the global community."[3] By August of 1979, The Cooperative included nine American community colleges, Pasadena City College being one of those represented. The mission of The Cooperative is

> . . . to identify, develop, and expand mutually beneficial international relationships which contribute to the improvement of college programs, services, and staff.[4]

Specifically, the objectives of The Cooperative are to:

1. provide for the internationalization of the curriculum

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[2] David E. Opter, The Politics of Modernization (University of Chicago Press, 1965), pp. 145-148.

[3] Community Colleges for International Development, Inc., Technical Assistance in Vocational and Technical Education (Florida, 1980), p. 1.

[4] Ibid.

2. provide for the professional/personal enrichment of faculty, staff, and students;

3. help promote world understanding and cooperation through educational linkages;

4. share human resources and educational expertise with other countries having similar educational interests and concerns; and,

5. provide mid-level manpower training and technical assistance in vocational and technical education to developing nations worldwide.[5]

The Bilateral Education Agreement between The Cooperative and the Republic of China included ten articles "designed to improve the quality of technical education offered in Taiwan professional colleges and provide for the integration of Chinese culture into U. S. community colleges."[6] These objectives are to be achieved through exchanges of presidents from the various member colleges in The Cooperative, in-service training programs for the Chinese in the United States and in the Republic of China, delivery of books and other educational materials to professional colleges in the Republic of China, and other activities.

One important provision of the Bilateral Education Agreement was carried out in the Spring of 1979 when a

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5. Ibid.

6. Ibid., p. 2.

group of presidents from various colleges in the Republic of China toured selected American colleges and universities. Among this group was the president of Taipei Medical College, whose wife is president of Shih Chien College, Taipei. A reciprocal visitation and tour of the Republic of China was made in the Fall of 1979 by a group of presidents from various American colleges. Among this group was the president of Pasadena City College, who returned to the United States with Sisterhood Agreements between this college and Shih Chien College, Taipei, and Taichung Institute of Commerce, Taichung.

Background of Pasadena City College

Pasadena City College is one of the 107 public two-year community colleges in the State of California. Although having undergone several organizational changes, the College was founded in 1924. It began as part of a local high school; it later merged into a four-year junior college; and in 1953-1954, it finally became a separate two-year community college.

In 1966 the voters of the seven communities represented by the College--the cities of Arcadia, El Monte, La Canada, Pasadena, San Marino, South Pasadena, and Temple City--agreed to formation of the Pasadena Area Junior College District, effective July 1, 1967, later to be known as the Pasadena Area Community College District in September of 1970. While most other community college districts in the State have multiple colleges, the Pasadena Area Community College District has the one college, Pasadena City College.

As a public-supported institution, the College is governed by a Board of Trustees representing the seven constituent communities served by the College. Thus one trustee from each of the communities is elected at large by the public to serve on the Board.

The philosophy of the College, similar to that of community colleges across the nation, is as follows:

> Pasadena City College is a community-oriented institution committed to providing general and specialized educational opportunities for all individuals regardless of race, nationality, creed, age, sex, or physical disability. Our primary purpose is to provide an atmosphere where individuals are stimulated to further their intellectual, social and personal development so that they can become productive and effective citizens.[7]

As stated in the College Bulletin, the goals of the College are to provide opportunities so students can:

> Discover and broaden their interests, develop their capacities, and achieve realistic and worthwhile goals.
>
> Develop the spirit of inquiry.
>
> Develop creative, disciplined thinking.
>
> Develop the ability to communicate ideas and feelings.
>
> Prepare themselves for their chosen vocations and receive guidance in choosing career goals.

---

[7] Pasadena City College, College Bulletin (April 1981), p. 1.

Fulfill their roles as responsible citizens.[8]

In line with other California community colleges, Pasadena City College provides educational opportunities to high school graduates or those over 18 years of age who can benefit from the instruction. The education is tuition-free to California residents. The community colleges are situated in various residential communities throughout the State to enable students to pursue their studies at institutions of higher learning close to their homes. Community colleges have as their functions the following:

1. general education
2. occupational education
3. college transfer
4. developmental education
5. continuing education
6. guidance
7. community leadership and service[9]

Pasadena City College itself offers 70 occupational programs and 61 programs that are transferable to four-year colleges and universities. It offers a variety of non-credit and special programs through its extended campus programs at approximately 80 different locations throughout the community; community service fee classes; parent education classes; and a Tuesday evening forum series featuring lectures and film series on a variety of topics of interest to the general public.

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[9] Ibid.

Thus, community colleges in California and throughout the United States are known as "comprehensive colleges" because they offer a wide variety of educational programs to meet the needs of its diverse population. The student population in these two-year institutions ranges from 18-year-old high school graduates to business men and women to housewives to retired persons.

As of the Fall 1981 semester, Pasadena City College had a total credit-course enrollment of 21,693 students--11,913 women and 9,780 men. (The total enrollment including non-credit, day, and evening students as of the Fall 1980 semester was 28,404.) Of the current enrollment, 6,404 students are considered full-time students carrying 12 units or more. Additional statistics show that the majority of students enrolled in credit courses at the College are between 18 and 20 years of age (6,673 students) and between 25 and 34 years of age (5,272 students).[10]

In addition to offering instruction in 11 foreign languages, the College's ethnic studies program includes courses in American Indian, Asian-American, Chicano, and Pan-African cultures. Studies on Africa, Asia, Europe, and Latin America are also available. As of the Spring 1981 semester, the College had a foreign-student population of about 425 students representing 65 countries.

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[10] Pasadena City College, For Your Information (October 12, 1981), Vol. VII, No. 5.

The College occupies 54 acres (22 hectares) near the heart of the City of Pasadena. Its facilities include a Campus Center providing meeting rooms and dining halls for students and faculty, a Bookstore and a Bank, an educational radio station (KPCC), an instructional computer center, a Learning Assistance Center providing instructional media and materials for student use as well as individual and small-group study and tutorial services, and a library containing over 100,000 books and almost 600 pamphlets, newspapers, and periodicals. The teaching and administrative staff consists of approximately 400 people, with an office and technical support staff of approximately 300.

Pasadena City College is accredited by the Western Association of Schools and Colleges. It is represented in both the California Community-Junior College Association and the American Community-Junior College Association. It is one of the nine member colleges of the Community Colleges for International Development, Inc., formed in 1976.

Background on Shih Chien College

Shih Chien College, Taipei, Taiwan, was founded in 1958 by the country's current Vice President, Mr. Tung-min Shieh. His philosophy in founding this women's private college was to promote home economics education so that women would be prepared to be efficient homemakers and mothers. Since its founding as a home economics college 24 years ago, Shih Chien College has expanded its curricular offerings to include business (accounting, computers, secretarial, international trade, and management), fashion design, food and nutrition, social work, and other programs. Shih Chien College is a three-year junior college (students enrolled in the evening school complete their studies in four years) approved by the Ministry of Education of the Republic of China. As a junior college, it offers diplomas to its graduates rather than degrees, which are conferred only by colleges and universities.

As with other higher educational institutions in the Republic of China, Shih Chien College admits students based on their achievement on the Joint College Entrance Examination (to be discussed in detail in a later chapter). As a private institution, the college charges its students a tuition of the equivalent of approximately US$250 per semester. As of the Spring 1981 semester, there was an enrollment of approximately 5,000 students--3,000 enrolled in the day program and 2,000 enrolled in the evening program.

Vice President Shieh was president of the college from its founding until 1972, at which time his son, Mung-Shiung (Milton) Shieh, M.D., assumed presidency. In 1978, Dr. Shieh became president of the Taipei Medical College;

and his wife, Helen C. C. Lin, Ph.D., ascended to the presidency. Dr. Milton Shieh was among the first group of college presidents from Taiwan to visit American colleges; and both he and his wife returned in the summer of 1980 to help initiate the exchange program between Shih Chien College and Pasadena City College that was to begin in the Fall Semester of 1980.

While the Ministry of Education of the Republic of China selects members of the governing boards for the country's public colleges and universities, private colleges select their own board members. Shih Chien College has a seven-member board that determines the philosophy, goals, curriculum, and funding for the College. The College has an instructional and administrative staff of approximately 135.

The College is located in the northern part of the City of Taipei and is situated on   acres of land housing facilities that include a large dining hall where Food and Nutrition Department students' "laboratory" work is the preparation of the meals served daily for students and faculty; a child care center to provide day care for children of college staff as well as others' children; a well-equipped music building and an auditorium; a five-story administration building that also houses classrooms and equipment for business classes; a three-story classroom facility housing the home economics, food and nutrition, tailoring and dressmaking, and social work laboratory facilities; and a gymnasium together with an outdoor swimming pool, tennis courts, and basketball courts.

The College has a unique setting for its students--two completely furnished houses on the campus, one furnished in traditional Chinese and the other furnished in a Western setting. As a culminating exercise for graduating students in the home economics programs, students reside in both houses on a rotational basis. During this time students apply their learnings and skills in maintaining the homes; plan, budget, and prepare all meals for themselves as a family unit; and prepare a banquet-type meal for selected guests, including the teachers of the program. In this way, students learn to plan for and prepare themselves for both traditional Chinese and Western lifestyles.

The College maintains an extension of its Taipei campus in Central Taiwan, where students must serve a brief residency during their tenure at Shih Chien College. In addition, the College has purchased additional property on which a second major campus is being planned for the near future. During the Spring semester of 1981, it was announced that the Ministry of Education was considering a proposal that Shih Chien College be given status as a four-year institution with degree-granting privileges.

Shih Chien College has promoted not only its Sisterhood Agreement with Pasadena City College but has also actively pursued continued faculty exchanges with its sister college in an effort to develop its curriculum, its technical knowledge, and its instructional personnel so it can compete favorably with other colleges and universities in the Republic of China.

LIMITATIONS OF THE STUDY

This study has the following limitations:

1. The study was limited to an examination and analysis of the postsecondary educational systems and institutions in the Republic of China and in the United States. However, for historical perspectives, data are also included on selected aspects of the lower levels of education in both countries.

2. Research on the Chinese higher educational system was conducted primarily in Taipei, Taiwan, and surrounding areas; that portion of the research related to the American higher educational system was conducted in Pasadena and Los Angeles, California.

3. The period of this study was from September 1980 to March 1982.

4. The higher educational system of the State of California was used as the basis for comparison with that system in the Republic of China; the structure of this State's public and private college and university system make it fairly representative of the higher educational system found across the United States.

5. The study attempted to represent both the public and the private sectors of higher education in both countries.

DEFINITION OF TERMS

The following terms are defined for the purposes of this study:

Cultural education: education that serves "as a process of transmitting the folkways and mores of a people or nation; . . . . progressive enlightenment and refinement by enriched experience and understanding."[11]

Culture:

> . . . the aggregate of the social, ethical, intellectual, artistic, governmental, and industrial attainment characteristics of a group, state, or nation and by which it can be distinguished from or compared with other groups, states, or nations, ...[12]

Exchange programs: ". . . the movement of scholars between institutions and across national borders"[13] to promote international understanding and cooperation for the betterment of all societies involved.

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[11] Carter V. Good, ed., Dictionary of Education (New York: McGraw-Hill Book Company, 1973), p. 155.

[12] Ibid., p. 156.

[13] Barbara B. Burn, "Exchange Opportunities in a No-Growth Period," Higher Education in the World Community, ed. Stephen K. Bailey (Washington, DC: American Council on Education, 1977), p. 89.

Higher education:

> Instruction offered to persons of considerable intellectual maturity, usually requiring previous preparation through secondary school; . . . . includes all education above the level of secondary school given in colleges, universities, graduate schools, professional schools, technical institutes, teachers colleges, and normal schools."[14]

International education: education recognizing that

> each ethnic group has important traditions that mark its cultural identity . . . . They include language, religious beliefs and practices, family structures and roles of family members, forms of artistic expression, and dietary customs.[15]

Republic of China: a province of mainland China, an independent republic known as Nationalist China or Taiwan (formerly Formosa). Bisected by the Tropic of Cancer, the island is 240 miles long and about 80 miles wide comprising 13,884.53 square miles. It is equivalent to the combined size of the states of Massachusetts, Rhode Island, and Connecticut. Its population as of 1979 is 17,102,388. The names "the Republic of China" and "Taiwan" are used interchangeably in this study.

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[14] Good, op. cit., p. 282.

[15] Milton J. Gold, Carl A. Grant, and Harry N. Rivlin, ed., In Praise of Diversity: A Resource Book for Multicultural Education (Washington, D.C.: Teacher Corps, Association of Teacher Educators, 1977), p. 13.

CHAPTER 2

REVIEW OF THE LITERATURE

A review of the literature included a study of the historical aspects of the Chinese and the American educational systems, higher education in California, education in America today, a cross-section of literature on international education, and a cross-section of literature on international exchange programs.

HISTORICAL PERSPECTIVES

The Chinese Educational System

In the early development of modern Chinese higher education, the objectives were primarily utilitarian; that is, training in modern languages and in technical skills through the professional schools or junior colleges. These practical objectives came about because of "trade relations and wars between traditional China and foreign countries. . ."[16]

Peking University, the first modern university established in China in 1898, set forth two objectives:

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[16] Ching-jiang Lin, "Current Trends and Needs of Higher Education in the Republic of China," Sino-American Seminars on Higher Education (Taipei: National Taiwan Normal University, April 28, 1980), p. 7.

". . . first, to emphasize the integration of Chinese and Western culture; second, to regard foreign languages as a means to Western learning rather than the essence of it."[17] In the early days, Peking University's mission was twofold: teaching and administration of national education in the entire country.

In 1911, with the overthrow of the Manchu Government, Dr. Sun Yat-sen, the founder of the Republic of China, hoped to establish a nation based on what is now called the Three Principles of the People: nationalism, democracy, and people's livelihood. He realized that attainment of these principles was by way of modernizing the Chinese educational system. In fact, even before the founding of the Republic of China, the concept of higher education in China had been practiced, with the function of Peking University in 1902 being to "foster faith and loyalty, to disseminate knowledge and to improve utilitarian learning."[18]

In 1913, according to the University Order, the function of a university education should be to "provide knowledge of higher learning and to educate capable personnel required by the nation."[19] Prior to 1913, the university's

---

17. Ibid., p. 8.

18. Ibid.

19. Ibid.

functions were geared toward advanced studies and the training of professional personnel to serve the country. After 1924, "the advancement of learning, the dissemination of technological knowledge, and aesthetic education" became the three functions of higher education that were emphasized.

The University Law of 1948 set forth that advanced study and research and the production of well-educated professionals be pursued at the university. This stipulation remains in tact within the revised University Law of 1973. The Junior College Law of 1948 set forth that the function of junior colleges was to provide instruction in applied science and technology. This stipulation remains in tact also within the revised Law of 1976.

Ching-jiang Lin summarizes the functions of higher education in the early days to the present as follows:

> (1) the pursuit of truth and scholarship;
>
> (2) the preparation of professional personnel;
>
> (3) the giving of general education; and
>
> (4) the proper service to the community and the nation.[20]

After the government of the Republic of China moved to Taiwan in 1949, there were in 1950 only seven institutions of higher education: one university, three colleges, and three junior colleges. In the 1960s, the total of these institutions grew to 30; in the 1970s, 96; and as of 1980, 101, consisting of 11 universities, 15 colleges, and 75 junior colleges.[21]

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[20] Ibid.

On December 25, 1946, the National Constituent Assembly of the Republic of China adopted Chapter 13, Section 5 of its Constitution the following provisions on education and culture:

> Article 158. Education and culture shall aim at the development among the citizens, of the national spirit of self-government, national morality, a healthy physique, scientific knowledge, and the ability to earn a living.
>
> Article 159. All citizens shall have an equal opportunity to receive education.
>
> Article 160. All children of school age from six to twelve years shall receive free elementary education. Those from poor families shall be supplied with book by the Government.
>
> All citizens above school age who have not received elementary education shall receive supplementary education free of charge and shall also be supplied with books by the Government.
>
> Article 161. The various levels of government shall provide a large number of scholarships to assist students of good scholastic standing and exemplary conduct who lack the means to continue their school education.
>
> Article 162. All public and private educational and cultural institutions in the country shall, in accordance with law, be subject to State supervision.

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[21] Ibid., p. 4.

Article 163. The State shall pay due attention to the balanced development of education in different regions and shall provide social education to elevate the cultural standards of the citizens in general. Grants from the National Treasury shall be made to frontier regions and economically poor areas to help them meet their educational and cultural expenses. The Central Government may either itself undertake the more important educational and cultural enterprises in such regions and areas or render them financial assistance.

Article 164. Funds earmarked for education, science, and culture shall be, in respect of the Central Government, not less than fifteen percent of the total national budget; in respect of the Provincial Government, not less than twenty-five percent of the total Provincial budget; and in respect of the Municipal or County Government, not less than thirty-five percent of the total Municipal or County budget. Educational and cultural foundations established in accordance with law, and their property, shall be protected.

Article 165. The State shall safeguard the livelihood of educational, scientific, and artistic workers and shall, as the national economy develops, increase their remuneration from time to time.

Article 166. The State shall encourage scientific discoveries and inventions and shall protect ancient monuments and ancient relics of historical, cultural, or artistic value.

Article 167. The State shall encourage or subsidize the following enterprises or individuals:

1. Private educational enterprises with outstanding records.
2. Overseas Chinese educational enterprises with outstanding records.
3. Individuals who have made scholarly or technical invention.

> 4. Educational workers who have rendered long meritorious services.[22]

The American Educational System

The American educational system was built on certain principles inherent in the culture of the United States:

> 1. ". . . that every American child has the right to an education."
>
> 2. ". . . that every child is educable."
>
> 3. ". . . that one of the main purposes of education is to supply citizens with enough knowledge to assist them in defending the individual freedom our government is dedicated to maintain."
>
> 4. ". . . that the first consideration in the operation of our schools must be to meet the needs of the individual child rather than the overall demand of the nation."
>
> 5. that there be ". . . a decentralized system of control over schools."[23]

Conant discusses "the nature of the American educational system" that makes it unique "so that our free society is unlike any other country."[24]

1. ". . . our educational ideals reflect the history of our nation." Whereas European countries had

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[22] 22. Education in the Republic of China (Taipei: Ministry of Education, 1980), p. 9.

[23] 23. Tyrus Hillway, ed., American Education (Boston: Houghton Mifflin Company, 1964), pp. 3-4.

[24] 24. James B. Conant, "The American High School," American Education by Tyrus Hillway, ed. (Boston: Houghton Mifflin Company, 1964), p. 221.

experienced differentiated class systems and struggles, the United States had not suffered so dramatically, believing "in equality of opportunity for all youth, irrespective of the economic status of the family."[25] Further, Conant states: "Our system of education must provide for a wide diversity of talents and of vocational goals."[26]

2. "Geographic diversity is another unique characteristic."[27] In this regard, Conant speaks of developing locally controlled high schools aimed at meeting the diverse needs of the diverse communities they serve.

3. ". . . the peculiar nature of our universities and colleges" is another distinctive aspect.[28] Again, the American and European systems are compared in what Conant calls Europe's "collection of professional faculties--theology, law, medicine, science and engineering"--and the fact that four-year liberal arts colleges and universities were scarce in Europe. The United States, on the other hand, has thousands of colleges and universities that provide liberal arts as well as a wide range of curricula, offering educational opportunities to large numbers of young people in both public and private systems;

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[25] Ibid.

[26] Ibid.

[27] Ibid.

[28] Ibid.

yet there are also universities that offer the "professional faculties" and specialty fields as well.

4. ". . . the fact that the ambitions of parents for their children are by no means uniform throughout the United States" is yet another aspect. This refers to the idea that even in rural areas one can find a comprehensive high school from which some students graduate and go to college or university and from which other students will seek employment immediately after graduation. In other areas, parents may want their children to continue their education beyond high school. The uniqueness is that many opportunities to explore various avenues are available to children and their parents; these various choices are based on student abilities and desires, parental desires and ambitions for their children, and guidance from counselors. Contrasted to European schools, if a student has plans to go to a university, that decision must be made at age 11; otherwise, formal full-time education will end at age 14 if the student has not applied for admission or has not been admitted.

5. ". . . the employment situation in the United States. . . differs so radically from the practice of employing youths in other lands" makes American education unique.[29] European youngsters not going to a university complete their education at age 14 and must obtain employ-

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[29] Ibid., p. 223.

ment immediately. This affects not only the educational picture of the country but also the employment situation for all citizens. Summarizing what many other writers on the American educational system report, Conant states:

> Clearly, unlike any other nation, we in the United States are committed to a system of education that, at both the high school and college levels, must provide for a wide variety of abilities and vocational aims.[30]

Preschool, kindergarten, and elementary education. Nursery school education (preschool ages three to four) began in the United States in 1919; 14 years thereafter, a federal government program was undertaken for nursery school education.[31] The concept was that such schools offer "valuable laboratory experience for psychologists and psychiatrists" in that children, parents, and the teachers are involved in cooperative efforts where ". . . learning is applied to life situations and parents gain a new understanding of their children."[32]

While preschool education is optional, the first period of formal education for children begins in kindergarten at age five. The first public kindergarten was founded in 1879 in St. Louis, Missouri.

Elementary school education from grades one through six were mandated by the California Education Code to teach the following subjects:

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[30] Ibid., p. 224.

[31] Ibid., p. 444.

[32] Ibid.

(1) reading
(2) writing
(3) spelling
(4) language study
(5) arithmetic
(6) geography
(7) history of the United States and of California
(8) civics, including study of the Declaration of Independence and the Constitution of the United States
(9) music
(10) art
(11) preparation for healthful living
(12) manners and morals
(13) nature of alcohol and narcotics
(14) fire prevention
(15) thrift
(16) public safety and accident prevention
(17) humane treatment of animals
(18) physical education
(19) American history
(20) science[33]

Provisions for teaching industrial arts and homemaking were also included in local elementary school districts.

Secondary education. Considered "one of the main achievements of the American system of education"[34] is the comprehensive high school in America, described by Conant as follows:

> A symbol of cultural diffusion, it unites various groups in the community. It offers a variety of programs for both those with academic goals and those with vocational goals. It contributes to equality of opportunity.[35]

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[33] Ibid., pp. 450-451.

[34] Ibid., p. 459.

[35] Ibid.

In 1918, the Commission on the Reorganization of SEcondary Education of the National Education Association spelled out the seven objectives of secondary education:[36]

(1) health instruction to "inculcate health habits, organize an effective program of physical activities, regard health needs in planning work and play, and cooperate with home and community in safe-guarding and promoting health interests."

(2) fundamentals: reading, writing, arithmetic, and oral and written expression

(3) family and home membership: "to make the individual a worthy member of a family." This concept was to be incorporated in such courses as social studies, art, music, and literature.

(4) vocational education

> should equip the individual to secure a livelihood for himself and those dependent on him, to serve society well through his vocation, to maintain the right relationships toward his fellow workers and society, and, as far as possible, to find in that vocation his own best development.[37]

(5) civic education "should develop in the individual those qualities whereby he will act well his part as a

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36. Commission on the Reorganization of Secondary Education, Cardinal Principles of Secondary Education (Washington, DC: National Education Association, 1918).

37. Ibid.

member of neighborhood, town, or city, State, and Nation. . . ."[38]

(6) worthy use of leisure: education should

> equip the individual to secure from his leisure the re-creation of body, mind, and spirit, and the enrichment and enlargement of his personality.[39]

The objective was for students to develop the ability to use "common means of enjoyment, such as music, art, literature, drama, and social intercourse. . . ." during leisure time.[40]

(7) ethical character

While the majority of the early secondary schools were private and taught primarily those courses required for entrance into college or university, the first public high school in the nation was founded in Boston in 1821 as a boys' school; the first public high school for girls was founded in 1826.

After World War II, compulsory school attendance until a child's eighteenth birthday or until completion of the twelfth grade was mandated. This legislation resulted from the unemployment of 16- and 17-year old youths near the end of the war, and these youngsters were lacking in other job skills and knowledge to compete with returning veterans, older and more experienced workers.[41]

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[38] Ibid.

[39] Ibid.

[40] Ibid.

Postsecondary education. Free public education beyond the secondary school to include general education and vocational education in grades 13 and 14 was proposed in anticipation of young people's inability to find jobs without having more general education and vocational training. There was a need to prepare young men and women to enter a large number of military, technical, commercial, and semiprofessional occupations and thus the need for a public institution beyond the twelfth grade.

Referring to the concept of the "junior college" and what is now called the "community college movement," Stoddard states that

> . . . it was indeed a strange academic world that required the high school graduate to embark upon a four-year college course or to abstain completely.[42]

One form of the two-year junior-community college was found in small communities in which two years of instruction were offered as an extension of the secondary school. An eight-year education--from grades 7 through 14--was thus provided for young people living in these communities. The curriculum was limited to those vocations represented in the community and those courses that were not offered at other postsecondary institutions in the area.

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[41] Educational Policies Commission, National Education Association, "Extending Public Education Upward," American Education by Tyrus Hillway, ed. (Boston: Houghton Mifflin Company, 1964), p. 227.

[42] George D. Stoddard, The Outlook for American Education (Carbondale, Il: Southern Illinois University Press, 1974), p. 125.

The second form of two-year college known today as the "comprehensive college" is the community college. These institutions

> provide vocational education in many fields, each institution including the chief occupations of a large region as well as of the city itself . . . . they cover practically all the occupations of the state which do not require education beyond the fourteenth grade.[43]

These institutions also offer courses equivalent to those offered in the first two years of four-year colleges and universities. In an attempt to provide students with a transition between high school and college, state departments of education

> . . . mapped out a tributary area for each community college and. . . adopted a regulation that a high school graduate will normally attend the community college in whose area his high school is located.[44]

As shown in Table 1, there were 52 public and private two-year colleges in the United States in 1919-1920; by 1959-1960, there were 593 such institutions.[45] Stoddard

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[43] Educational Policies Commission, National Education Association, op. cit., p. 230.

[44] Ibid., pp. 230-231.

[45] Ibid.

Table 1

GROWTH OF JUNIOR COLLEGES IN THE UNITED STATES

(Selected Years 1919-1920 to 1959-1960)

Years	Public		Private		Total	
	No.	Enrollment	No.	Enrollment	No.	Enrollment
1919-1920	10	2,940	42	5,162	52	8,102
1929-1930	129	36,501	148	19,115	277	55,616
1939-1940	217	107,553	239	42,301	456	149,854
1949-1950	290	170,899	221	58,312	511	299,211
1950-1960	334	393,553	259	60,064	593	453,617

Source: United States Office of Education (cited by Educational Policies Commission, National Education Association, "Extending Public Education Upward," American Education by Tyrus Hillway, ed. (Boston: Houghton Mifflin Company, 1964).

cites U.S. Census Bureau statistics reporting that between 1960 and 1970, enrollments in these two-year community colleges quadrupled to 2.5 million in 1974; predictions are that by 1984, there will be 5 million people enrolled in these unique institutions.[46]

The popularity and attraction of these community colleges is that each "is accessible, inexpensive, versatile, and it adds seasoning to any part-time occupation." Summarizing the role and importance of community colleges in the American educational picture, Stoddard states:

> By combining "terminal" sequences in technology and liberal arts, the community college does more than reduce the number of college dropouts; it offers programs that bring to a reasonable completion what was begun, or perhaps only hinted at, in high school.[47]

Further, Stoddard proposes that the two basic supporting features of the community college are career advancement and "the promise of life enrichment through learning."[48]

> To be culturally additive, to be meaningful, to justify the billions in public funds required to support its huge body of students, the community colleges must find its place. . . in the grand continuum of education that begins with the child's first

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[46] Stoddard, op. cit., p. 126.

[47] Ibid., p. 125.

[48] Ibid., p. 127

> day in school and need not end short of senility.[49]

Adult education. To provide public education and to expand horizons for adults, the adult evening school was first established in New York in 1661. Adult education became popularized in New England churches, then through the Young Men's and Young Women's Christian Associations, and eventually through evening and correspondence courses offered through universities.

Writing in 1964, Mayer says of adult education:

> The greatest educational expansion in our time will take place in adult education. . . . Adult education is not merely a supplement to the education of the young; it is an autonomous enterprise, and demonstrates that education need never stop, that it implies more than cultural ornamentation. . . . It provides new outlooks and new ideas, and thus becomes the foundation of an open society.[50]

In spite of efforts to provide free public education to high school graduates, the adult population was one that needed attention for it was the adult group who "must wait upon experience and maturity" before being aware of the need for education.[51] Thus comprehensive programs of free public adult education were instituted for adults and out-of-school youths in the forms of part-time and evening classes in all subjects. Adults were also eligible to attend regular classes in the community colleges as well as in the thirteenth and fourteenth grades of the secondary schools.

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[49] Ibid.

[50] Frederick Mayer, American Ideas and Education (Columbus, OH: Charles E. Merrill Books, Inc., 1964), pp. 526-27.

[51] Ibid., p. 231.

Summary. To summarize the American educational system, Mayer states:

> Education is the main hope of our country. Without it, freedom becomes merely a slogan and representative government becomes tyranny. Without education, the public taste disintegrates, technology cannot advance, and human relations return to the state of the jungle. . . .[52]

HIGHER EDUCATION IN CALIFORNIA

The concept of education in California began in 1846 when settlers expressed concerns for mass literacy, civility, and moral behavior.[53] From these settlers came their

> experience with social institutions, including a high regard for the state system of schooling--a system available to all children. . . and supported by public taxation. Public schools. . . should be free from sectarian direction . . . and could be limited, at least partially, by the creation of state boards of education and by state legislative influence over the curriculum.[54]

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[52] Ibid., pp. 11-12.

[53] Irving G. Hendrick, California Education: A Brief History (San Francisco: Boyd & Fraser Publishing Company, 1980), p. 7.

[54] Ibid.

In 1855 the charter for California's first private university was approved, establishing the College of California in Oakland. By 1868 this college merged with the University of California in Berkeley, the first of what was to become one of eight campuses of the University of California system.

California's early postsecondary institutions were mainly private, many of them having church affiliations, most offering liberal arts programs. Today there are 56 private colleges and universities throughout the state enrolling 81,200 full-time undergraduate students.[55]

In 1862, California was the ninth state to establish a normal school for teacher training, stressing both knowledge in subject matter and teaching techniques. These schools since 1962 have been known as state universities and colleges and comprise the 19-campus California State College and University System. These public colleges provide a variety of curricula on a tuition-free basis to state residents.

California was not the first state to establish the junior college, but legislation was enacted in 1907 to provide an additional postsecondary education stratum in the state's higher education hierarchy.

With the increasing numbers of college and university campuses blossoming throughout the state and with the increasing enrollments at all institutions of higher learning, there was need to define who was eligible for admission to the state's public institutions and to differentiate the missions of the various institutions.[56] This was the purpose of the Master Plan approved by the 1960 State Legislature providing

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[55] Counselor's Directory, Independent California Colleges and Universities (Santa Ana, CA: Association of Independent California Colleges and Universities, 1981).

> for the development, expansion, and integration of the facilities, curriculum, and standards of higher education in California.[57]

With regard to admission of students into the public institutions,

> the state colleges select first-time freshmen from the top one-third (33-1/3 percent) and the University [of California] from the top one-eighth (12-1/2 percent) of all graduates of California public high schools.[58]

With this guideline, responsibility for lower-division enrollments was deflected to the junior/community colleges. "This planning assured all graduates from accredited high schools admission to colleges somewhere within California's public higher educational system."[59]

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[56] Hendrick, op. cit., p. 63.

[57] Ibid.

[58] A Master Plan for Higher Education in California, 1960-1975 (Sacramento, CA: California State Department of Education, 1960), p. 73.

[59] Hendrick, op. cit., p. 63.

The University of California was given responsibility for research; instruction in law; graduate instruction in medicine, dentistry, veterinary medicine, and architecture, as well as authority to award doctoral degrees in all fields "except that it may agree with the state colleges to award joint doctoral degrees in selected fields."[60]

The function of the state universities and colleges was to provide undergraduate and graduate education in all fields at all levels not granted to the University of California.[61]

The role of the junior-community colleges, then, was to offer liberal arts instruction not beyond grade 14 as well as vocational-technical programs leading to employment.

Recognizing the role of private postsecondary institutions, the legislature included in the Master Plan establishment of what is now known as the California Postsecondary Education Commission. The Master Plan officially recognized private colleges and universities in the State's educational process. This recognition was vital when so many private institutions were threatened by the public institutions. This Commission consists of individuals from both public and private educational sectors and shares in the responsibilities of recommending new campuses and programs for the public institutions. While serving only in an advisory capacity, the Commission does participate equally in decisions affecting both private and public education in the State.

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[60] Ibid.

[61] Ibid., pp. 63-64.

EDUCATION IN AMERICA TODAY

The Modern Period of education in America--the 20th Century--has been characterized by greater educational opportunities for more people, inclusion of scientific studies and "revolutionary theories of learning [to replace] rote learning."[62]

Table 2 shows the growth of education from the early 1920s to the late 1970s. According to Mare, the increases in the growth of education, the amount of formal education obtained by individuals, and the number of people who continue their schooling are attributed to or are affected by family characteristics, among others:

> Persons whose parents have more schooling, higher income, and better jobs; whose families are smaller; and who were raised in urban areas typically obtain more schooling than persons from less-advantaged backgrounds.[63]

Educational growth may also be attributed to economic incentives placed by employers who raise their education

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[62] Hillway, op. cit., p. 13.

[63] Robert D. Mare, "Trends in Schooling: Demography, Performance, and Organization," America Enters the Eighties: Some Social Indicators by Richard D. Lambert, ed. (Philadelphia: The American Academy of Political and Social Science, 1981), p. 101

Table 2

NUMBER OF SCHOOLS IN THE UNITED STATES
(PUBLIC AND PRIVATE)

1929-1930 to 1976-1977
(in thousands)

	1929-1930	1939-1940	1949-1950	1959-1960	1969-1970	1976-1977
Elementary schools	238.3	183.1	128.2	97.9	66.8	62.6
Secondary schools	23.9	25.0	24.5	25.8	26.3	26.5
Higher education (includes universities, colleges, professional schools, teachers' colleges, and junior-community colleges)	5.0	6.0	6.0	7.0	1.1	1.2

Source: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, Statistics of State School Systems; Statistics of Public Elementary and Secondary Day Schools; and Statistics of Non-Public Elementary and Secondary Schools requirements for both current employees and prospective applicants; new technology in the labor market that create increasing needs for more technically oriented workers. "Legislative enactments facilitating or requiring school attendance"[64] is another contributing factor. This includes child labor laws, compulsory school attendance, provision of educational benefits to veterans under the G.I. bill, among others.

The organization of the educational system itself has also contributed to the growth of education--expenses for schooling, extension of the school year, consolidation of schools within school districts to cut operating and maintenance expenses, increases in the number of institutions of higher learning, and smaller class sizes taught by better qualified teachers.[65]

The 20th Century has been considered the period of "educational revolution" among the American population. Imbedded in this revolution is the belief that

> In the United States we consider it [education] so basic to our democratic way of life that we not only encourage but require all our children to attend schools.[66]

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[64] Ibid., p. 102.

[65] Historical Statistics of the United States, Colonial Times to 1970, Bicentennial Edition, Part I, U.S. Bureau of the Census (Washington, DC: U.S. Government Printing Office, 1975)

[66] Hillway, op. cit., p. 3.

Education in America today, according to the noted late educator Robert M. Hutchins, is ". . . at once a right of the individual and a necessity to the state."[67]

INTERNATIONAL EDUCATION

> A challenge confronts us all--to throw off the monoculturalism that has oppressed us all, majority and minorities alike, and to find instead a new respect for the many heritages which feed America's culture.[68]

International education encompasses international studies, international relations, and area studies--the so-called global studies--that focus on issues and problems.[69] According to Burn:

> Today, as in the past, international education is being shaped by changes in the international community and in the relative position of the United States within that community. Among these changes are the growing interdependence of all nations, both rich and poor; the emergence of new actors on the international stage; prospects for increased cross-cultural contact; and the continuing need for the United States to learn from other countries.[70]

Writing on the need for international education and the "growing interdependence of nations," Kerr cites the following statistics:

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[67] Robert M. Hutchins, The Learning Society (New York: Frederick A. Praeger Publishers, 1968), pp. 5-6.

[68] Gold, Grant, and Rivlin, op. cit., p. vi.

[69] Barbara B. Burn, Expanding the International Dimension of Higher Education (San Francisco: Jossey-Bass Publishers, 1980), p. 4.

[70] Ibid., p. 6.

> Between 1960 and 1977, the value of U. S. imports of goods and services increased from $23.7 billion to $193.7 billion.
>
> Between 1960 and 1976, the value of exports increased from $28.9 billion to $182.2 billion.
>
> Foreign investments in the United States increased from $8.8 billion to $30.2 billion.
>
> American investments in foreign countries increased from $31.9 billion to $137.2 billion.[71]

Kerr provides additional evidence of increasing citizen interest in the world and in world affairs:

> The number of American visitors abroad increased from 11.1 million in 1960 to 22.3 million in 1976. U. S. foreign travel expenditures increased from $2.3 billion to $9.4 billion between 1960 and 1976.
>
> The number of American passports issued and renewed between 1960 and 1977 increased from 853,087 to 3,107,122.
>
> The number of foreign students enrolled in institutions of higher education in the U. S. increased from 53,100 in 1960-1961 to 250,000 in 1978-1979.
>
> The number of Americans studying abroad increased from 12,500 in 1962 to 70,000 in 1975.
>
> The number of U. S. college faculty members abroad increased from 3,793 in 1962 to 6,522 in 1975.[72]

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[71] Clark Kerr, "Global Education Concerns of Higher Education for the 1980s and Beyond," Expanding the International Dimension of Higher Education by Barbara B. Burn (San Francisco: Jossey-Bass Publishers, 1980), pp. xxii-xxiii.

[72] Ibid., p. xxiii.

Referring to the cross-cultural contact and diversity mentioned earlier, Burn states that because of greater contacts with other cultures in the future, Americans will need to develop greater sensitivity in dealing with and relating to the world's peoples. She states that while 7 million Americans traveled abroad in 1977, there will be greater numbers traveling the world in the future. Also, there will be more foreigners "wanting to study, sojourn, or settle in the United States."[73] She reports there were 22 million such foreigners in the United States in 1979. With the rising unemployment rates in such developing countries as India and in the African, Asian, and Latin American countries, there will be "an increase in the emigration of education people. . . to the United States and other industrialized countries."[74]

Additional statistics highlight the fact that Americans today are exposed more to other cultures than in the past two to three decades:

> In 1970, about 17 percent of all Americans were either of foreign parentage or foreign born, and immigration (both legal and illegal) is expected to account for almost half of the nation's population growth between 1970 and 2000. . . .

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[73] Burn, op. cit., p. 11.

[74] Ibid., p. 12.

> Also contributing to the cultural diversity of America are blacks (about 11 percent of the population), Asian Americans (2 percent), and many other ethnic groups, mainly of European origin.
>
> In 1976 there were 30 million people in the United States whose native tongue was not English or who lived in households where languages other than English were spoken.[75]

According to Hester, American colleges and universities since World War II are better equipped to prepare specialists in languages other than Western European languages and to provide courses dealing with other than Western studies and cultures. In addition, faculty expertise, curricular offerings, and library collections have been improved toward greater awareness of internationalism; this enrichment is due to the increasing numbers of both foreign students and foreign faculties as well as greater opportunities for studies abroad.[76]

Taggart sets forth the roles of institutions of higher educationin international education:

1. "A basic component of a liberal education must be an intelligent understanding of our changing world."[77] He

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[75] Ibid., p. 16.

[76] James M. Hester, "To Illuminate Tomorrow: Higher Education in an Interdependent World," Higher Education in the World Community by Stephen K. Bailey, ed. (Washington, D. C.: American Council on Education, 1977), p. 5.

[77] Glen L. Taggart, "Association for International Cooperation in Higher Education and Research," Higher Education in the World Community by Stepen K. Bailey, ed. (Washington, D. C.: American Council on Education, 1977), p. 97.

states a growing need to provide students with knowledge of cultures of other worlds because of this country's dependence and interdependence on citizens "who understand the basic and underlying sources of conflict and who are sympathetic to the compulsions which animate the other peoples of this globe."[78]

2. The number of specialists trained for international service must be increased. Such specialists must be equipped "with skills that include a knowledge of institution building in foreign cultures."[79] As national problems persist and escalate, Taggart sees an acute shortage in America of people trained in international science, education, and engineering.

3. ". . . a spirit of educational cooperation among the scholars of the world" needs to be developed as well as the need to "interrelate educational programs of American colleges with those of institutions in other countries."[80]

4. There is a need to "build additional world problem-solving activities into the service arms of our institutions."[81] In addition to advancing learning within our institutions, such a proposal would better educate the American citizenry.

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[78] Ibid.

[79] Ibid.

[80] Ibid.

[81] Ibid., pp. 97-98.

5. "Scholars from every discipline and culture" need to be assembled among our faculties so that "we may explore together the questions that man finds so troublesome."[82]

These five factors listed above were adopted by the Association for International Cooperation in Higher Education and Research (AICHER) sponsored by the American Council on Education, the National Association of State Universities and Land-Grant Colleges, the American Association of Universities, the American Association of State Colleges and Universities, the Association of American Colleges, and the American Association of Community and Junior Colleges.

Mentioned earlier was the Community Colleges for International Development, Inc. (called The Cooperative) consisting of nine American community colleges whose mission is "to identify, develop, and expand mutually beneficial international relationships which contribute to the improvement of college programs, services, and staff."[83] This organization developed eight vehicles by which cooperation through international education have been effected:

1. Bilateral Education Agreements have been signed with the Republic of Suriname (1979) and the Republic of

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[82] Ibid., p. 98.

[83] Community Colleges for International Development, Inc., op. cit., p. 1.

China (1980). The Suriname Agreement is directed toward teacher training in the United States over a three-year period in such fields as agriculture, engineering, and building construction. The Chinese Agreement is also directed toward education in the technial fields.

2. Educational conferences each year to promote international education.

3. The establishment of overseas centers to provide for careful integration of "travel and other cultural experiences to ensure meaningful learning outcomes" for students.[84]

4. Since the Cooperative is a non-profit organization, its existence is dependent on contributions in the form of grants from the United States Office of Education and private organizations.

5. Exchanges of faculty, staff, and students in colleges and other educational institutions have been effected in Canada, England, and Taiwan.

6. Technical assistance through educational visits abroad has been provided countries requesting such assistance.

7. Training programs in the United States have been conducted by those foreign governments or U. S.-based organizations.

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[84] Ibid., p. 2.

8. Visitors from around the world are welcomed each year. These visitors are interested in the community and junior college concept unique to the United States and likewise share with American educators information on their respective cultures.

Private organizations have also been actively promoting and developing international education in schools and in teacher training institutions:[85]

1. The Global Development Studies Institute offers programs in research, workshops for teachers, publications, and outreach programs.

2. Global Perspectives in Education has trained 3,000 teachers in global education and publishes Intercom, a teachers' manual.

3. The Institute for Development of Educational Activities (affiliated with the Kettering Foundation) published a Handbook for Global Education: A Working Manual in 1977.

4. The Mid-America Center for Global Perspectives in Education works with educational and citizen groups in Ohio, Illinois, and Indiana.

5. The Center for War/Peace Studies
6. The Asia Society in New York
7. The African-American Institute

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[85] Burn, op. cit., pp. 31-32.

8. The Overseas Development Council of Washington, D. C., maintains focus on the developing world.

The need for international education and the internationalization of education is perhaps best summarized by Hester as follows:

> . . .if the educated person is to be suitably prepared for a world of shifting power centers, growing environmental vulnerability, misused and depleted resources, uninhibited capital consumption in some countries and unchecked poverty in most of the others, he must possess knowledge, perspectives, and values that only a relatively few global minded pioneers possess today.[86]

INTERNATIONAL EXCHANGE PROGRAMS

> A stay in another country with the opportunity to learn its language, culture, history, and customs is always an invaluable experience and one with perhaps significance in today's internationally minded world.[87]

Exchanges of scholars began in 1209 when a number of scholars from Oxford migrated to Cambridge. In the 19th Century, Germany was the site of migration for hundreds of American scholars set out to study and do research.

Perhaps the most long=lived exchange program is the Fulbright-Hays program begun shortly after World War II under which more than 150,000 scholars and graduate students from the United States and 110 other participating countries have "studied, taught, or pursued research abroad."[88] This program was initially created by renegotiating outstanding European debts to the United States, which provided the funds for the program. The object of Fulbright exchanges are:[89]

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[86] Hester, op. cit., p. 6.

[87] Schools Abroad (Boston: Porter Sargent Publishers, 1967), p. 15.

1. related to teaching: "to foster intellectual contact between the United States and its wartime enemies as well as its allies."

2. related to research: research emerged on American college and university campuses during the post-war years. These increased research budgets "reinforced and reflected a climate in which American scholars were inclined to frame ambitious research programs that included study abroad." With this added emphasis on research in American institutions of higher learning, foreign faculty members who were interested in research were attracted to American campuses.

3. related to Fulbright-sponsored foreign professors: more foreign professors are conducting research than are lecturing in American institutions. Because of this imbalance between teaching and research, "it is far more likely that a student at a major institution abroad will hear an American lecturer than that an American student will hear a foreign lecturer."

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[88] Barbara B. Burn, "Exchange Opportunities in a No-Growth Period," Higher Education in the World Community by Stephen K. Bailey, ed. (Washington, D.C.: American Council on Education, 1977), p. 89.

[89] Burn, 1980, p. 85.

In addition to national programs funded by government sources, as with the Fulbright program, international exchanges take other forms:[90]

1. national programs funded wholly or partially by private sources

2. programs between specific university systems or groups of institutions in the United States and those in foreign countries

3. direct exchange programs between United States campuses and schools abroad as well as between individual departments within institutions

4. exchange programs that revolve around special projects involving scholars from several countries (such as those developed between professional organizations, associations, or societies)

In spite of the longevity of international exchange programs such as the Fulbright program and others, there have arisen several problems. For example, because of current restrictions of the United States Department of Labor on permitting foreign citizens to work in this country and to obtain permanent residence here, higher educational institutions can no longer recruit and offer appointments to foreign faculty. This is seen as a problem "when the already high and probably rising proportion of tenured faculty offers little scope for faculty diversification," exchanges of faculty offer one way to diversify faculty in domestic institutions."[91]

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[90] Ibid., p. 86.

Although international or even domestic exchanges of faculty can be used to strengthen or develop new specialties when resources would otherwise preclude the hiring of new faculty or implementing new programs, several drawbacks are recognized:

1. inadequate funding. Both nationally and internationally, the value of the American dollar abroad has declined. The Fulbright program, while originally catering to a small number of countries and involved only a handful of faculty members, now sends between 500-550 Americans abroad annually to over 120 nations.[92] Faculty exchanges with western European countries require relatively modest funding; however, exchanges with developing countries require considerable more funding and planning.

2. types of institutions to which scholars are sent. American scholars generally go to the best-known institutions abroad while foreign visiting scholars are limited to a few research institutions here. Exposure of Americans is limited, then, to the larger institutions abroad "with no contact at all at the many institutions where such contact is most likely to be appreciated.[93]

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[91] Burn, 1977, p. 91.

[92] Burn, 1980, p. 87.

[93] Ibid., p. 88.

3. types of American institutions that send their scholars abroad. According to Burn, 71 percent of the faculty at major research institutions in America travel abroad during their careers; however, only 29 percent of junior college faculty do so.[94] The concern here is that more faculty need to be concerned with exposure to foreign travel, which would enhance exchange programs with increased experience and knowledge on the part of participants.

4. faculty members who participate in exchanges. According to R. D. Lambert as cited by Burn, 79 percent of the faculty in American international studies never travel abroad for professional reasons while another 7 percent have traveled only once abroad during their careers. The limitation in participants is due partly to the disciplines usually involved in faculty exchanges--medicine, engineering, and social science.[95]

5. the limited involvement or contact with specific countries. The United Kingdom, France, Canada, and Germany have hosted three-fifths of visits by American scholars; Brazil and India account for about 2 percent of the total; and the U.S.S.R., for only 4 percent of visits from American scholars. To be truly "international" there

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[94] Ibid.

[95] Ibid., p. 89.

must be greater involvement with a greater number of countries.[96]

SUMMARY

To summarize this review of the literature on various aspects of education, international education, and international exchange programs, the following quotation is cited:

> To be successful as intercultural communicators, we do not stop at "knowing the people." We recognize similarities that are significant and we bridge differences that make a difference: in customs, goals, and thought patterns.
>
> And beyond that recognition, we feel our way into appropriate intimate contact with seemingly alien values, attitudes, and feelings.
>
> We are able to work with and within such differences, neither losing our own values, or inappropriately modifying them in the confrontation, nor protecting ourselves unnecessarily with walls of emotion or intellect.[97]
>
> (Modified from Roger Harrison)

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[96] Ibid., p. 90.

[97] Intercultural Communicating (Provo, Utah: Brigham Young University, Language and Intercultural Research Center, 1976), p. 2.

CHAPTER 3

METHODS OF INVESTIGATION

To carry out the objectives of this study, the following procedures were used:

The Chinese Educational System

1. Library research and a review of the literature on the historical, current, and future aspects of higher education in the Republic of China.

2. Visitations to various private and public colleges and universities in and around Taipei City to observe facilities, equipment, instructional methods and materials.

3. Visitations to various divisions of the Ministry of Education to obtain information on the structure of the higher educati-nal system, institutional accreditation procedures and requirements, teacher preparation and certification requirements, and establishment of curriculum and academic standards.

4. Interviews with administrators and teachers at various colleges and universities in Taipei to observe and to learn their experiences with and perceptions of the higher educational system.

The American Educational System

1. Library research and a review of the literature on the historical, current, and future aspects of higher education.

2. Communication with representatives from the Chancellor's Office, California Community Colleges; the California Community and Junior College Association; and the American Association of Community and Junior Colleges to learn of the structure of the community and junior colleges.

3. Communication with officials of the Accrediting Commission for Community and Junior Colleges, Western Association of Schools and Colleges, to learn about the accreditation procedures and requirements.

4. Visitations to and discussions with representatives of various public and private colleges and universities within the State of California.

CHAPTER 4

FINDINGS: CHINESE HIGHER EDUCATIONAL SYSTEM

Educational Objectives

The purpose of Chinese education, according to the Ministry of Education, is

> . . . to improve national living, to achieve mutual assistance, to develop national economic life and to prolong the life of the nation, so that we can attain, by all means to independence of the nation, democracy and in higher standard of living, and in the end, advance to an ideal world where harmony and equality prevail.[98]

Structure of the Educational Administration

The Central Government of the Republic of China has three administrative levels of education: The Ministry of Education, the Provincial Department and Bureau of Education, and the Special Municipality Bureau of Education.

The Ministry of Education has responsibility over the national schools at all levels, such as the National Taiwan University, National Taiwan Institute of Technology, National Taiwan Academy of Arts, National Yang

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98. Education in the Republic of China (Taipei: Ministry of Education, 1980), p. 9.

Ming Medical College, and the National Fu Hsing Opera School; national social education organizations, such as the National Historic Museum, National Taiwan Science Hall, and the National Taiwan Art Hall; and all private colleges and universities.

The Provincial Department and Bureau of Education include all levels of schools, private secondary schools, and social educational organizations belonging to the Province of Taiwan. (Geographically, Taiwan is a province of Mainland China. Politically and economically, however, Taiwan is an independent republic. Thus, under existing conditions, both the Ministry of Education and the Provincial Government have similar administrative functions with regard to educational matters.)

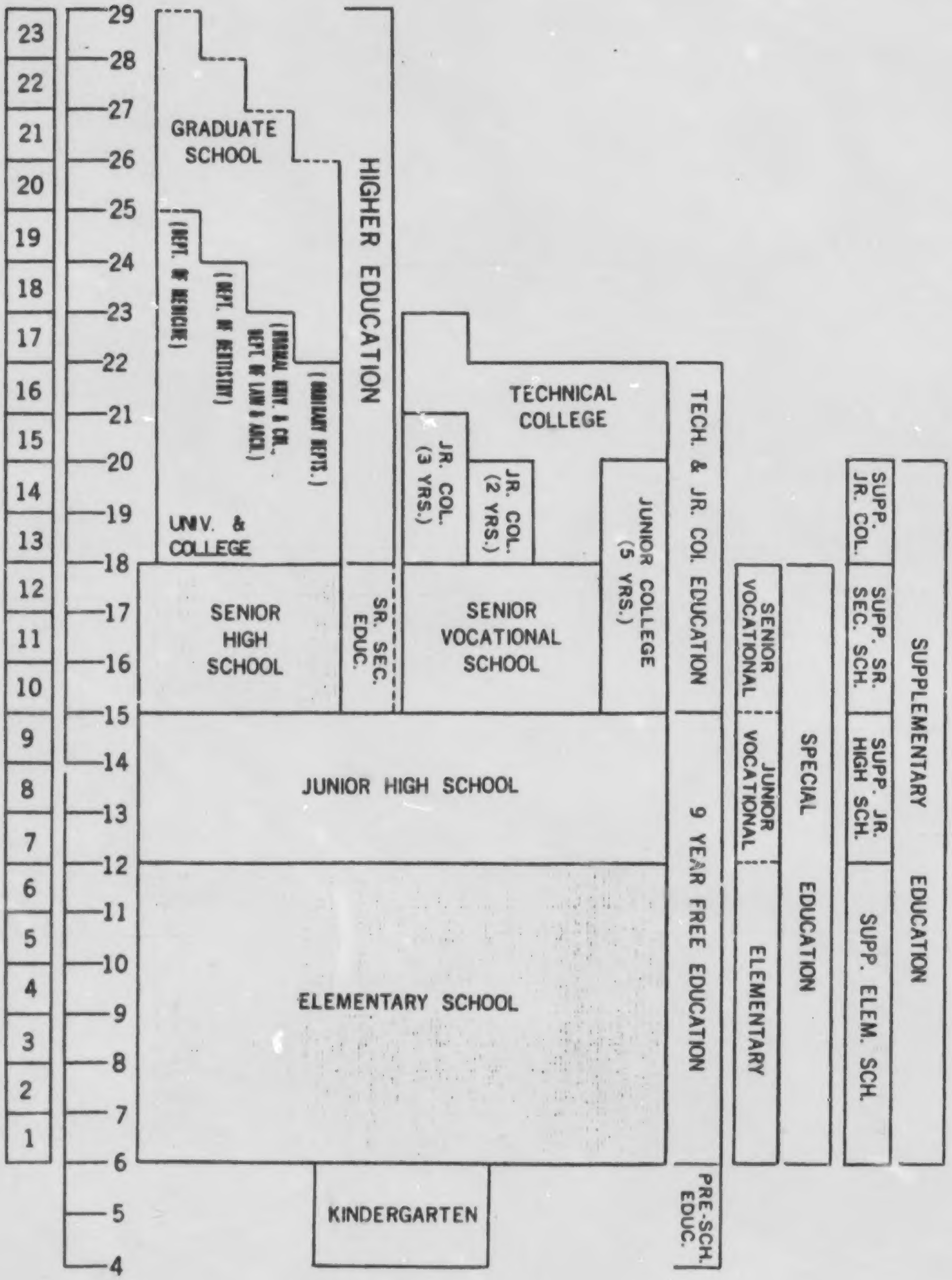
The Special Municipality Bureau of Education covers an area larger than individual cities and counties within the Province of Taiwan. The Bureau of Education at this level is responsible for all levels of municipal schools as well as all private secondary, elementary schools and kindergartens and municipal social educational organizations.

Structure of the Educational System

Education in the Republic of China is categorized as follows: national compulsory education, senior high school education, vocational-technical education, junior college education, higher education, social education, and supplementary education. Refer to Figure 1.

FIGURE 1

THE CURRENT SCHOOL SYSTEM
SY 1979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GRADUATE SCHOOL
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(DEPT. OF DENTISTRY)
(NORMAL UNIV. & COL. DEPT OF LAW & ARCH.)
(ORDINARY DEPTS.)
UNIV. & COLLEGE
HIGHER EDUCATION
SENIOR HIGH SCHOOL
SR. SEC. EDUC.
TECHNICAL COLLEGE
JR. COL. (3 YRS.)
JR. COL. (2 YRS.)
JUNIOR COLLEGE (5 YRS.)
SENIOR VOCATIONAL SCHOOL
JUNIOR HIGH SCHOOL
ELEMENTARY SCHOOL
KINDERGARTEN
TECH. & JR. COL. EDUCATION
9 YEAR FREE EDUCATION
PRE-SCH. EDUC.
SENIOR VOCATIONAL
JUNIOR VOCATIONAL
ELEMENTARY
SPECIAL EDUCATION
SUPP. JR. COL.
SUPP. SR. SEC. SCH.
SUPP. JR. HIGH SCH.
SUPP. ELEM. SCH.
SUPPLEMENTARY EDUCATION

Source: EDUCATION IN THE REPUBLIC OF CHINA, Ministry of Education (Taipei, 1980), p. 11.

National compulsory education. Compulsory education encompasses nine years of free education: six years (ages 6 to 12) for elementary school and three years (ages 12 to 15) for junior high school. In a speech given by Premier Sun Yun-suan at a Conference on Compulsory Education in Taiwan in March 1981, the purpose of compulsory education is

> . . . to cultivate good citizens equipped with modern knowledge who can pass on traditional Chinese culture to the next generation.
>
> It is also to inculcate a sound outlook on life and correct moral values in the young students so that they will grow up into sound citizens, well trained in morality, wisdom, physique, group education, and beauty.[99]

Secondary education. Secondary education includes either senior high school or senior vocational school, each for three years of study (ages 15 to 18). Secondary school education is to cultivate

> the student's interest in learning and ability to learn in order to prepare him for more advanced work in later years.[100]

Vocational education includes the following seven areas of study: agriculture, Chinese opera, commerce, home economics, industry, marine products, nursing and midwifery. Providing students with productive skills and knowledge so they can be employed productively after graduation is the main objective of these specialized schools.

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[99] "Purpose of Compulsory Education," China Post, March 27, 1981, p. 4.

[100] Educational Statistics in the Republic of China (Taipei: Ministry of Education, 1980), p. 13.

Higher education. Higher education includes the junior colleges, technical colleges, colleges, universities, and research institutes. The purpose of institutions of higher education is "to provide opportunities for making advanced studies and train students to be specialists in their chose (sic) field."[101]

Junior college education is for either five years (ages 15 to 20) upon graduation from junior high school or for two or three years (ages 18 to 21) upon graduation from senior high school. Most of the colleges have specialties in the applied sciences--commerce, medical technology, nursing, and pharmacy. Junior colleges may be public or private institutions, although at the present time, most are private organizations. Graduates of junior colleges receive diplomas rather than degrees.

The four-year colleges and universities offer bachelors degrees, with many offering graduate degrees as well. Regular programs of study take four years for full-time day students (ages 18 to 22) or five years for evening students. However, teachers' colleges and studies in law, architecture require five years of study (ages

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[101] Ibid., p. 14.

18 to 23), while dentistry requires six years (ages 18 to 24), and medicine, seven years (ages 18 to 25).

Graduate work requires at least two additional years of study for an M.A. degree and at least two more years for the doctorate. Graduates of the two-, three-, or five-year junior college programs may continue their studies at either the National Institute of Technology or Tatung Technical Institute; these students are also eligible for regular university programs.

Technical college education can be for a full four years of study after graduation from a senior vocational school (ages 18 to 22), two years of study after graduation from a two- or five-year junior college (ages 20 to 22), or two years of study after graduation from a three-year junior college (ages 21 to 23).

Included in the higher education structure are the normal university and the normal colleges, which train teachers for the secondary schools; and the junior colleges, which prepare teachers for the elementary schools. The junior normal colleges have a five-year program of study (ages 18 to 23) upon graduation from junior high school; the Taiwan Normal University and the normal colleges have four-year programs of study (ages 18 to 22).

Research institutes, such as those affiliated with the National Taiwan University, are operated in conjunction with related departments within the University or with various government offices to provide students with opportunities for practice, experimentation, and research in their fields of study. The Academia Sinica, the highest academic institute in Taiwan, is a government-funded group of research centers consisting of eleven research institutes in American Culture, Biological Chemistry, Botany, Chemistry, Economics, Ethnology, History and Philosophy, Mathematics, Modern History, Physics, and Zoology.[102] The purpose of the Academia Sinica is "to coordinate academic research with the practical needs of the nation."[103]

Social education. Included in the country's social education are not only the special schools for exceptional children and the supplementary schools but also education via museums, libraries, science and art exhibition halls.

The three levels of education--elementary, junior vocational high school, and senior vocational high school--are incorporated in the special schools for the blind, deaf, physically handicapped, and the mentally retarded. The years at each level of schooling correspond to the regular schools, although the emphasis is placed on students' acquisition of technical-vocational skills. All such schools are government-supported under the mandate of National Compulsory Education, although some of these exceptional students have the privilege of an additional three years of free education (at the senior vocational level) above other students in the system.

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[102] China Yearbook, 1980 (Taipei: China Publishing Co., 1980), p. 268.

[103] Ibid.

Supplementary education. This category of education consists of general and vocational education at the elementary, junior high, senior high, and junior college levels. The purpose of supplementary education is to provide basic education to those who failed to enter or who were not admitted to secondary educational institutions, those who dropped out of school, and those young people who are unemployed.

There are 143 general supplementary schools, 188 vocational schools, and five junior colleges. Such general courses in citizenship as Chinese, mathematics, and civics are offered for adults in elementary schools while short-term courses are provided elsewhere for training in technical skills. Elementary education for illiterate people between 13 and 45 years are provided in 25 different classes.

Summary. Table 3 summarizes the number of schools at all levels and the number of students enrolled in the educational system.

Table 3

NUMBER OF SCHOOLS AND STUDENTS

(By Type of Institution)

	Public		Private	
	Number Schools[1]	Number Students[2]	Number Schools[1]	Number Students[2]
Preschool	375	41,821	701	123,344
Compulsory Education				
Elementary	2,399	2,230,734	22	25,629
Junior high	628	1,035,975	9	46,995
Secondary Education				
Senior high	82	142,574	104	38,834
Vocational high	78	136,715	106	191,680
Higher Education				
Junior college	20	40,306	55	134,317
College	5	*	10	*
University	8	60,612	3	88,758
Special Education				
Blind	2	217	1	30
Deaf	3	2,001	1	88
Mentally retarded	1	144	0	0
Physically handicapped	1	196	0	0

Table 3 (Continued)

	Public		Private	
	Number Schools[1]	Number Students[2]	Number Schools	Number Students[2]
Supplementary Education				
General	117	37,721	26	16,044
Vocational	63	59,261	130	110,152

*No separate figures were provided for this category.

1. Ministry of Education, Educational Statistics of the Republic of China, 1980, pp. 4-5.

2. Ibid., pp. 20-21.

University/College Entrance Requirements

Beginning in 1954, the universities and colleges in Taiwan instituted the Joint College Entrance Examination (JCEE). This system allows potential college and university applicants to take one entrance examination; the score is used by the Ministry of Education to determine in which institutions students are eligible for admission.

The JCEE is divided into four groups so that, depending on the student's choice of study, the particular examination covering the specific subject field is taken:

Group A:	Natural Sciences and Engineering
Group B:	Humanities and Literature
Group C:	Biological, Agricultural, and Medical Sciences
Group D:	Social Sciences, Law, and Business

The general information portion of the JCEE includes Chinese, English, and the Three Principles of the People. The other three subjects on the examination depend on the particular subject field group, as follows:

Group A:	Mathematics A, Physics, Chemistry
Group B:	Mathematics B, History, Geography
Group C:	Mathematics A, Biology, Chemistry
Group D:	Mathematics B, History, Geography

Through the application procedure for admission to the country's colleges and universities, the candidate applies for admission to one or more departments of the schools of his or her choice in rank order. Candidates' names are ranked according to their examination scores within each of the four groups; candidates are then admitted to the various departments in the various institutions according to this ranking. Once admission to a particular department in a particular institution is closed, the candidates are then placed in the departments of their second choice, and so on, until all vacancies for the ensuing school year are filled.

In 1979, only 29.24 percent of all candidates who took the JCEE in that year were admitted to institutions of higher education.[104] Table 4 presents a summary of the results of that test, at which 219,251 candidates participated.

The first JCEE administered each summer is for entrance into four-year degree-granting universities and colleges as full-time day students. If students do not pass this examination or, if they pass but cannot be placed in the institution of their preference, they may apply for and take a second entrance examination for admission to the evening school of a four-year institution. The procedure for placement according to ranking of students' scores is identical to that for day-school applicants. A third and fourth examination are administered for applicants to the three-year junior colleges (non-

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[104] Chien-hou Huang, "The JEE of Universities and Colleges in the Republic of China," undated.

TABLE 4

RESULTS OF 1979 JOINT COLLEGE ENTRANCE EXAMINATION

	GROUP A			GROUP B			GROUP C			GROUP D		
Level of Institution	Number of Applicants	Number Passed	Percent Passed	Number of Applicants	Number Passed	Percent Passed	Number of Applicants	Number Passed	Percent Passed	Number of Applicants	Number Passed	Percent Passed
Universities and Colleges - Day	29,463	11,355	38.53	25,292	5,078	20.07	14,015	4,773	34.05	25,927	6,498	25.06
Universities and Colleges - Evening	5,908	2,240	37.91	13,938	2,825	20.26	1,898	410	21.60	18,128	4,850	26.75
Two-year Junior Colleges - Day	27,076	6,471	23.89	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
Two-year Junior Colleges - Evening	3,012	1,896	62.94	-0-	-0-	-0-	-0-	-0-	-0-	14,119	3,124	22.12
Three-year Junior Colleges - Day	7,766	980	12.61	8,244	1,930	23.41	2,905	950	32.70	12,962	3,720	28.69
Three-year Junior Colleges - Evening	1,299	810	62.35	1,299	1,000	26.37	-0-	-0-	-0-	3,507	840	23.95

Source: EDUCATIONAL STATISTICS OF THE REPUBLIC OF CHINA, Ministry of Education, 1980, pp. 42-43.

degree granting institutions) for day school admission and evening school admission, respectively. (The five-year junior colleges admit junior high school graduates who must also take and pass the JCEE upon graduation from junior high school. Placement in these junior colleges is identical to the procedures for the other educational institutions.)

Eligibility for admission to a public university or college's day school program means attaining the highest score possible out of the 700 on the JCEE. In addition to obtaining "minimum" scores on this rigorous and highly competitive examination, students must also meet any additional requirements imposed by the particular departments at the institutions.

Appendix A presents a partial listing of the four-year universities and colleges and their respective departmental JCEE requirements for each of the four groups; Appendix B, a partial listing of the three-year junior colleges and their respective departmental requirements. As can be noted, there is no consistency in the requirements among the institutions nor among similar departments at the various institutions. With the departments being allowed to establish their own admissions criteria, students seemingly have more opportunities to be admitted to some school for which their JCEE scores qualify them.

Chien-hou Huang states that, although there have been numerous changes to the JCEE system since its inception 26 years ago, there remain many complaints--primarily in the procedure for placing and admitting students:

1. Of the approximately 100,000 students who sit for the examination each year, only about 25 percent are admitted to the country's 26 four-year colleges and universities as day students. The remaining 75 percent of the applicants must be relegated to the evening schools at these four-year institutions or to the junior colleges.[105]

2. The various components of the JCEE are essentially achievement tests based on instruction within the educational system in previous years; such tests have not been standardized.[106]

3. Teachers at the senior high schools are teaching for the examination rather than teaching according to the guidelines established.[107]

4. Although students may be fortunate enough to be admitted to schools of their choosing, many are not admitted to the departments of their top preference. This situation is due partly to the students, who feel that by listing several departments on their applications they will have a better chance of gaining admission somewhere to study something.

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[105] Sino-American Seminars on Higher Education, op. cit., p. 13.

[106] Ibid.

[107] Ibid., p. 14.

5. Students report that even though they were admitted to the department and the school of their choice, they soon realize that the subject area was not what they expected it to be or that the area of study was not suited to them. There appears to be a lack of proper counseling, guidance, and/or aptitude testing to enable students to make appropriate choices of majors and careers.

6. Once a student has been admitted to a particular department within an institution, he or she is expected to pursue the prescribed course of study. A student wishing to change majors and transfer to another department must do so after having his or her college entrance examination score reviewed by officials of the Ministry of Education.

7. If graduates of three-year junior colleges want to transfer to a four-year university or college, they are required to drop back one to two years when admitted to the higher institution. If the university has a similar department and curriculum from which the junior college student graduated, the student drops back only one year; where there is no similar departmental or curricular offering, the student drops back two years. The intent of this process is to require that the student enter a class at his or her own level, to fulfill prerequisite courses that other students in that same department are currently taking.

Institutional Accreditation Procedure

Since the Ministry of Education administers all educational programs, it oversees the construction and development of all new schools and their accreditation in terms of curriculum, teacher qualifications, facilities, and standards of operations.

Universities and colleges are accredited or reevaluated every three years through the Ministry of Education network. All departments in the same subject area in every university and college in the country are evaluated simultaneously on a three-year rotational basis. For purposes of accreditation and evaluation, the Ministry of Education has divided each institution into eight major departmental areas.

The evaluation process involves a school's application to the Ministry of Education, completion of self-evaluation forms, and a visitation by a committee.

Self-Evaluation. The set of Investigation Forms of University Evaluation by the Ministry of Education includes ten areas for self-evaluation. These forms are completed by the institution prior to the actual visitation by the official evaluation committee. The ten areas are as follows:

1 Teachers' qualifications--full-time teaching, including preparation for teaching, previous experience, and subject matter taught

2. Teachers' qualifications--part-time teaching, including the same criteria established for the full-time teaching staff

3. Teachers' qualifications--combined full-time and part-time staff; listing of research work or publications of the faculty in the past five years

4. Curriculum--a listing of courses by number; number of credits and hours; elective versus required courses; teachers of the courses, whether part-time or full-time faculty; textbooks and reference sources required of students; requirements for written assignments

5. Classes--reference and textbooks used for each course; course outlines and procedures; teaching methods used; practice conditions provided; teacher evaluation and grading methods and criteria

6. Library facilities--books (Chinese language and other languages); extent of financial assistance to acquire new holdings; number of seats in the library; the volume of books and other materials; the funds spent in the last five years, persons (and their qualifications) who staff the library

7. Library Study Room facilities--provisions for student study facilities

8. Equipment--General Classroom--listing of inventory and dates of purchase; number of items; value of equipment; usage of equipment in comparison to student enrollment

9. Equipment--Practice Room--study conditions, temperature, size of area, environment, safety features; money spent in the last three years on equipment; plans for the next three years in the acquisition of new equipment

10. General affairs--number of department meetings held; discussion topics at meetings, results of meetings; plans for the next three years in the development of the department; needs for teachers in the next three years and in which subject areas; financial condition of the department; sources of finances for the department; use of funds--whether according to budget or other criteria; number of students enrolled in the department; number of graduates and where students are employed after graduation, whether in public or private sector, number in teaching, etc.; number of graduates going abroad for further study, number remaining in Taiwan for further study; brief history of the department, particular characteristics or makeup of the department; and special problems or areas of concern in the department

Visitation. Following completion of the self-evaluation documents, a visitation committee is formed through the Ministry of Education. A leader is first selected by Ministry officials; he or she in turn will select members who have expertise in the particular department(s) being evaluated nation-wide. Members of the evaluation committee are selected from universities, colleges, institutes, or industry; the number of members varies depending on the department being evaluated at a particular time and the number of institutions nation-wide being evaluated.

Potential members of evaluation committees are chosen from a list of persons recommended by their respective institutions or companies as being qualified to evaluate educational programs, teaching staff, and equipment and facilities.

The evaluation committee has the responsibility of visiting and evaluating the same department in every college and university in Taiwan, which can encompass a period of two to three months. In this way, however, committee members can evaluate all departments simultaneously, making comparisons between and among departments, faculties, and facilities.

Teacher Preparation, Certification, and Promotion

In general, the qualifications of teachers are screened and approved by either the Central or the Provincial educational authorities. Teachers of secondary and elementary schools are screened or registered according to their education and experience; teachers at the university and college levels, according to their education, experience, and record of publications in their fields.[108]

Preparation and certification. Elementary school teachers are trained at the nine normal junior colleges while secondary school teachers are trained at the two normal colleges and Taiwan Normal University, all government-supported institutions. Course requirements at all teacher training institutions are identical except for such areas of specialization as arts and handicraft, history and geography, language and literature, mathematics, music, natural science, pre-school education, and physical education. Thus, upon completion of the prescribed curriculum, students are automatically certified to teach in the subjects and at the specific grade level for which they prepared.

Because all teacher training institutions are public institutions, certain regulations may be imposed on graduates:

1. All students completing a five-year teacher education program are obligated to teach for at least five years after graduation. Graduates from the National Taiwan Normal University are obligated to teach only two years upon their graduation. (Men are excepted from this

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[108] Education in the Republic of China, op. cit., pp. 26-27.

requirement since they must first complete their military training upon graduation from college or university before assuming any teaching position.) This appears to be a way of compensating the government for providing students with an education. It is also a way of ensuring a sufficient number of teachers for its elementary and secondary schools.

2. There are certain geographic restrictions placed on graduates of some institutions. For example, the Taipei Municipal Teachers College trains teachers primarily for the Taipei City schools. This ensures a sufficient supply of teachers for the large student population in this particular city. While these graduates may teach outside Taipei city, graduates of teacher education institutions outside Taipei may not be allowed to teach in this city.

Student or practice teaching is provided for one week in the fourth (4th) year of the teacher training program; in the last year, four weeks are devoted to student/practice teaching. Because there may be as many as 10,000 children in any one elementary school, two student teachers will often be assigned to each elementary school classroom. Student teaching is scheduled during the school year so that all student teachers are completing their practice teaching at the same time in the same school.

Many teacher training institutions have affiliated elementary, junior high, or senior high schools nearby where teacher candidates can observe and participate in experimental projects as part of their course work.

Table 5 summarizes the number and various categories of teachers in the Republic of China during the 1979-1980 school year.

While extensive training is provided in specialized teacher training institutions to prepare elementary and secondary school teachers, there is no specific training provided for those teaching at the college or university level. Most of the teachers in this latter group enter teaching upon completion of their graduate studies at the university or college, having specialized in specific subject areas. The Ministry of Education feels it is critical that teachers in the lower grades and in special education attend teacher training institutions; however, the feeling does not extend to teachers at the higher levels.

Table 6 summarizes the eligibility requirements for registration as a teacher at the various levels.

Teacher Ranks and Promotion; Compensation

There are four rankings of teachers at the college and university levels: teaching assistant, lecturer, associate professor, and professor. Table 7 lists the requirements for entry at or promotion to each rank.

Table 5

NUMBER AND CATEGORIES OF TEACHERS AT VARIOUS LEVELS OF SCHOOLS 1979-1980

Level of School	No. of Teachers
National Education	
Elementary school	69,207
Junior high school	43,647
Senior High Education	13,035
Senior Vocational High Education	11,940
Higher Education	
Junior college	7,194
College	3,665
University	5,270
Special Education	466
Supplementary Education	
General education	450
Vocational education	3,597

Source: Educational Statistics of the Republic of China (Taipei: Ministry of Education, 1980), pp. 8-9.

Table 6

ELIGIBILITY REQUIREMENTS FOR TEACHERS*

Kindergarten

Application for registration as qualified teacher by meeting one of the following requirements:

1. Graduation from normal school, normal junior college, special normal course, normal university, college of education, or education department of a university;
2. Graduation from home economics department of college or university having earned more than 12 credits on education subjects; or
3. Graduation from senior secondary school having earned more than 12 credits on three educational subjects at a designated school.

Application for verification test to become qualified (test consists of written, oral, and teaching parts):

1. Studied in related departments at university or college with passing scores.
2. Graduated from senior secondary school.

Elementary School

Application for registration - meet one of the following:

1. Graduation from junior normal college or normal school or special normal course, normal college, normal university, college of education, department of a university
2. Graduation from junior college, college or university majoring in music, physical education, or art and having earned more than 16 credits on three educational subjects.

Application for verification test:

Same as listed for Kindergarten teaching

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*Education in the Republic of China, op. cit., pp.26-27

Junior High School

Application for registration - must meet one of the following:

Teacher of general subjects:

1. Graduation from normal college or normal university majoring in the subjects of teaching or having earned more than 20 credits on subjects same as the subjects of his teaching.
2. Graduation from graduate school with a master's degree having earned more than 20 credits on educational subjects.
3. Graduation from the same or similar department of university or college having earned more than 20 credits on educational subjects.
4. Graduation from different department of university or college having earned more than 20 credits on educational subjects and more than 20 credits on specialized subjects.

Industrial arts teacher or vocational subjects:

1. Graduation from junior college or university studying in departments same as subjects of his teaching.
2. Graduation from senior vocational school studying same subjects of his teaching with more than three years' teaching experience.

Application for verification test - one of the following:

1. Graduation from university, college, or special study courses.
2. Registered or verified qualified elementary school teacher having more than 7 years of teaching experience with a good record.

Senior Secondary School

Application for registration - meet one of the following:

Teacher of general subjects:

Same qualifications as listed for junior high school teachers

Industrial arts teacher or teachers of workshop management, driving, abacus, typing, shorthand:

1. Graduation from junior college or university majoring in same subject of his teaching with more than 2 years' practical experience.
2. Graduation from senior vocational school majoring in same subject with more than 5 years' practical experience.

Educational subjects teacher of normal school:

1. Graduation from normal university, normal college, or education department of a university.
2. Graduation from graduate school of education with a master's degree.
3. Graduation from ordinary university or college having earned more than 20 credits in educational subjects.

Vocational subjects teacher of vocational school:

1. Graduation from normal university or normal college or ordinary university or college in department especially for training vocational school teachers.
2. Graduation from university, college, or graduate school with master's degree majoring in the same subject and having earned more than 20 credits on educational subjects.

Application for verification test - one of the following:

1. Graduation from university, college, junior college, or special training courses.
2. Registered or verified qualified junior high school teacher with more than 2 year's teaching experience and a good record.

Table 7

TEACHING RANKS IN HIGHER EDUCATION*

Teaching Assistant

1. Graduation from a junior college with three years of professional work experience in the teaching field
2. Graduation from a junior college with two years of work experience in an academic setting.
3. Graduation from a university or college with a bachelor's degree

Lecturer

1. Graduation from a university or college with a master's degree
2. Four years' experience as a teaching assistant
3. Publishing experience
4. Five year's experience as a secondary school teacher with publishing experience

Associate Professor

1. Graduation from a university or college with a doctorate
2. Production of "specialized publications"
3. Service as a lecturer for three years
4. Possession of a master's degree
5. Completion of research work or performance of special professional job for four years

Professor

1. Graduation with a doctorate
2. Service as an associate professor for three years
3. Completion of research work
4. Production of "important publications"

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*Education in the Republic of China, p. 27.

Promotion. Applications for changes in academic rank must be submitted to the appropriate educational administrative agency. A research paper must be completed by the teacher approximately one year prior to the date the minimum tenure requirement will be met. The teacher's university or college administrator will evaluate the paper in terms of subject matter taught, content of the paper, report of findings, and analysis. The administrator may also have a committee of experts in the subject field read and evaluate the paper. Passing these two evaluations, the paper is submitted to the educational agency for final evaluation.

The administrative agency will submit the paper to an Independent Board of Evaluators for a final review. This Board is comprised of a pool of professors from various subject areas from various colleges and universities. These professors have been recommended by their respective institutions to be included in the resource file of prospective evaluators. Thus when a paper in a particular subject area is to be evaluated, the resource file is referred to and appropriate members are selected to serve on the Board.

Promotion in rank is not, however, guaranteed to applicants. Although a teacher may have met the tenure requirements and other stipulations for promotion, an advancement in rank is not automatically granted. Each institution must maintain a certain percentage of its faculty at each of the four ranks. Thus, the institution must have an "opening" at a certain rank before a teacher can be promoted. Therefore, qualified teachers may wait several years before being promoted to a higher rank.

Teacher compensation. Teacher salaries in the Republic of China are standardized at each rank or level in the public schools. Salaries in the private sector vary according to the financial resources of those institutions.

Full-time teachers at all levels receive both a monthly cash salary and a monthly ration allowance. Teachers' salaries include such factors as whether housing is provided, whether administrative responsibilities are part of the work load, and whether research is being conducted.

Table 8 shows the monthly salary schedule for teachers at the various levels.

Teachers' monthly ration allowance includes rice, edible oil, salt, and fuel; housing; chief's allowance, and any supervisory class hours. The amount of rations allowed each teacher per month depends on his or her marital status; for a married teacher, the allowance is further based on the number and ages of his or her dependents. The amount of housing allowance is based on the level or rank of the teacher--with from NT$500-$700

Table 8

MONTHLY SALARIES FOR TEACHERS

School Level	New Taiwan $	Equivalent U. S. $*
Elementary school	$ 8,400-16,410	$230.14-449.59
Secondary school	8,730-17,310	$239.18-474.25
College-University		
Teaching Assistant	10,180-11,860	$278.90-324.93
Lecturer	13,560-15,585	$371.51-426.99
Assoc. Professor	17,989-40,610	$492.74-564.66
Professor	21,410-24,410	$586.58-668.77

*United States $1 = New Taiwan $36.50

Source: Education in the Republic of China, pp. 27-29

(US$13.70-$19.18) per month provided. A supervising teacher receives a monthly allowance of NT$330-$450 (US$9.04-$12.33).

Part-time teachers receive only an hourly salary for actual classroom time. At the secondary school level, hourly salaries range from NT$188 (US$5.15) for junior high school teachers; NT$209 (US$5.73) for senior high school teachers; and NT$235 (US$6.44) for senior vocational school teachers. At the college and university levels, a differential for evening school faculty is given over the day faculty. Hourly salaries for part-time higher educational faculty are as follows, based on the rate of exchange for 1980 as NT$36.50 = US$1:

Rank	Taiwan $	US $
Teaching Asst.	$10,180-$11,860	$278.90-$324.93
Lecturer	$13,560-$15,585	$371.51-$426.99
Assoc. Professor	$17,985-$20,610	$492.74-$564.66
Professor	$21,410-$24,410	$586.58-$668.77

A comparison of salaries and allowances for 1979 and 1980 shows that salary increases of 20 percent were granted all elementary and secondary school teachers in 1980; increases of approximately 17 percent were granted to all public college and university teachers in 1980. However, monthly allowances were not increased.

Teacher Responsibilities

All schools in the Republic of China are in operation from 8 a.m. to 5 p.m. Monday through Friday and from 8 a.m. to 12:30 p.m. Saturday. Teachers and students alike are required to carry full loads during the school year, which is from mid-September through June.

The number of hours per week that a teacher is required to be in the classroom, as well as the number of hours he or she is required to be on campus, depends on the teaching rank and institution. The on-campus hours per week includes the number of in-class teaching hours, as follows:

Teaching Rank	Teaching Hours	On-Campus Hours
Teaching Asst.	14	44
Lecturer	12	40
Asst. Professor	11	32
Professor	9	32

Teachers may also be assigned administrative duties as part of their assignment at a university or college, for which released time from teaching is given or additional compensation is provided.

Grading and evaluation. The Ministry of Education has developed a standardized grading scale to be used by all teachers for evaluating students in university- and college-level courses. While each teacher determines his or her own requirements for the course in terms of the number and types of assignments to be given students, final course grades are determined on the following ratio:

Assignments	30 percent
Midterm exam	30 percent
Final exam	40 percent

Students who fail the final examination in a course have an opportunity to take another final examination, since it is weighted so heavily in determination of the final course grade.

Curricular Offerings

The curricula at the various levels of education are dependent on the objectives and policies of the Chinese educational system. Standards for establishing new courses, revising or upgrading existing courses, and eliminating courses from each level of school is based on the course's "degree of current economic growth and the actual needs of the community," according to the Ministry of Education.

Elementary and secondary. Curricular offerings at the elementary, junior high, and senior high school levels are standardized. Elementary school students attend classes from 19-25 hours per week during their six years: junior high school students, from 30-35 hours per week; and senior high school students, from 33-36 hours per week.

The curriculum in the senior vocational high school includes both the required core courses as well as the specialized vocational training. The core courses offered in both the regular senior high schools and the vocational high schools are Chinese, English, Civics, Three Principles of the People, Physical Education, Military Training, Mathematics, and Science. The number ofcredits and hours devoted to these core courses varies according to the vocational specialty and the individual institution. The remainder of the program is related to vocational training. Vocational high school students attend classes for approximately 36 hours per week.

Junior college. Because the junior colleges offer specialized programs, the curricular requirements differ. The core requirements, however, are standardized.

Impact of Vocational-Technical Education

"Education is the root of national existence and culture is its lifeline, whereas science and technology provide the motive force for national development," according to Premier Sun Yun-suan in his Oral Administrative Report to the Executive Yuan (5) on September 25, 1980.[109]

There is no doubt that vocational and technical training play a major role in the educational organization and planning in Taiwan. As mentioned previously, students may apply for admission to a senior vocational high school--instead of a regular senior high school--upon graduation from junior high school (and upon successfully passing the Joint College Entrance Examination) for three years of study. Junior high school graduates may also apply to five-year junior colleges for vocational training. As listed in Table 9, vocational education is divided into seven categories. Table 9 also shows the enrollments for school years 1978 and 1979.

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[109] "Premier Sun Yun-suan's Oral Administrative Report to the Executive Yuan (5)," China Post, September 25, 1980, p. 4.

During the school year 1979-1980, there were a total of 184 vocational schools--78 public and 106 private--compared to a total of 101 junior colleges, colleges, and universities. These 184 vocational schools employed 11,940 full-time teachers. The vocational programs offered in the 193 supplementary schools employed 3,597 vocational teachers.[110]

According to a survey reported in the China Post on September 14, 1980, educational authorities anticipate a need to train 11,142 vocational teachers between 1979 and 1989. The Ministry of Education has adopted a new policy to recruit more teachers to promote vocational training as an "extension of national education." Technological

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110. Educational Statistics of the Republic of China, op. cit., pp. 4-5, 8-9.

Table 9

CATEGORIES AND NUMBERS OF VOCATIONAL EDUCATION STUDENTS 1978-1979

Category	1978[a]		1979[b]	
	No.	%	No.	%
Agriculture	14,193	4.55	14,640	4.46
Chinese Opera	843	.27	1,042	.31
Commerce	131,625	42.18	137,884	41.99
Industry	140,418	45.00	149,559	45.54
Home Economics	8,687	2.78	8,207	2.50
Marine Products	6,759	2.17	6,687	2.04
Nursing and Midwifery	9,535	3.05	10,376	3.16
Totals	312,061	100.00	328,395	100.00

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[a] *Education in the Republic of China*, 1979, pp. 42-43.

[b] *Education in the Republic of China*, 1980, pp. 42-43.

subjects will require between 480 and 550 new teachers during the 1980s while commercial subjects will need between 290 and 400 teachers annually during this same period.[111]

In 1974 the National Taiwan Institute of Technology was established. It offers two-year programs, four-year bachelor's degree programs, and a master's degree program. Its seven departments include chemical engineering and technology, construction engineering and technology, electrical engineering and technology, electronic engineering and technology, mechanical engineering and technology, and textiles. The graduate school provides advanced studies in engineering and technology.

Admission to the two-year program requires graduation from a junior technical college; admission to the four-year program, graduation from a senior vocational high school; and admission to the graduate program, graduation from a college or university with a bachelor's degree or its equivalent.

In addition to providing formal educational programs for the student population, the Institute provides training and upgrading of skills and knowledge for teachers of vocational and technical subjects.

In a paper delivered at the Sino-American Seminars on Higher Education on April 30, 1980, Mr. Pei-chi Chang stated that there needs to be a greater relationship between higher education and manpower training and planning. His expectations are that "educational output should be planned in such a way to match the manpower requirements. . ."[112] Also, he stated:

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[111] "4,000 New Teachers Per Year for High Schools," China Post, September 14, 1980.

> In order to meet the rising manpower requirements of the industry, and sciences and technology development programs, the strengthening of science and engineering education becomes an important policy.[113]

To meet this objective, Mr. Chang indicated that emphasis be placed in higher education on the further expansion of science and engineering, giving interested and qualified students priority for studies in these fields. To further promote the development of higher education in these needed fields, Mr. Chang stated the urgency of expanding graduate schools

> . . . not only because of the rapid economic growth, but also because of the fast growth of modern industries, which need more technical and research personnel at a higher level.[114]

In other proceedings of the Sino-American Seminars, Dr. Chih Tang stated that because "science and technology reflect the degree of a country's overall development, such as agricultural, industrial, educational, and social development," higher education in Taiwan must face the problem of "the lack of a bridge between universities and industries."[115] Part of the problem with this lack of coordination, according to National Taiwan Institute of Technology President Dr. Kao-wen Mao, is that "university professors are equipped with modern theories and knowledge. They do not necessarily have the experience of a production line."[116]

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[112] Proceedings of the Sino-American Seminars on Higher Education, op. cit., pp. 36-48.

[113] Ibid., p. 40.

[114] Ibid.

A visit to the National Taiwan Institute of Technology revealed an extremely modern, well-equipped institution with a well-educated (many from European, United States, and Japanese colleges and universities) and trained faculty. The latest technological equipment--from computer center to audio visual center--from around the world is provided for training and laboratory work.

A visit to Tatung Institute of Technology revealed that its curriculum, objectives, and philosophy--working in conjunction with Tatung Company--combined with the Tatung Senior Vocational School of Industry, seem to accomplish part of Dr. Mao's expectations. The Tatung Institute

> cooperates very closely with Tatung Company by conducting research activities for Tatung Company, thereby contributing significantly to the development of technological knowledge in the

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[115] Ibid.

[116] Ibid., pp. 56-70.

Institute and the innovation of new products for the Company.[117]

Impact of Education for the Handicapped

In addition to the country's Nine-Year Fundamental Education Act passed in 1968 providing for nine years of free compulsory education, three other pieces of legislation were implemented on behalf of children with special education needs:[118]

1. The Regulation of Special Education Development and Improvement, 1970. This act provided for special programs for eight categories of exceptional children: the mentally retarded, the visually impaired, the hearing impaired, the speech handicapped, the orthopedically handicapped, those with chronic mental disorders, the socially maladjusted, the emotionally disturbed, and the gifted and talented.

2. The Regulation of Exceptional Children Identification and Educational Placement, 1974. This provision was initiated to establish clinical personnel who could identify and diagnose exceptional children in the eight categories listed above.

3. The Regulation of Teaching Certificates for Teachers of Exceptional Children, 1975. This act required

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[117] Catalog of Tatung Institute of Technology, 1980, p. 9.

[118] Department of Social Education, Special Education in the Republic of China (Taipei: Ministry of Education, 1976), pp. 2-3.

teachers to complete at least 16 credit hours of university or college work beyond regular teacher certification courses to earn certification as special education teachers.

As of 1979, the Republic of China had four schools for the deaf, three for the blind, one for the physically handicapped, and one for the mentally retarded.[119] These schools offer programs from elementary to junior vocational school and senior vocational school "so that the students may proceed gradually from one level to another and be thus enabled to acquire some technical skill."[120]

A study undertaken in 1975-1976 by the Ministry of Education revealed a total of 34,564 out of 2,350,000 school-age children (ages six to twelve) identified as having some physical or mental handicap; the same survey revealed that "less than 10% of these exceptional children were currently in special education programs."[121]

The following is a summary of visits made to two of the special schools, one for the visually handicapped and the other for the mentally retarded.

Visually handicapped. A visit to the Taipei Municipal Chi-Ming School for the Blind revealed a well-equipped and well-staffed residential school for the 102 students in all three school levels (elementary, secondary, and junior vocational). The government supports all activities of the school and provides room and board, uniforms, and books for the students. While other public schools fall under the nine-year compulsory free education mandate, students at Chi-Ming enjoy the privilege of free senior vocational education as well.

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[119] Education in the Republic of China, 1980, p. 38.

[120] Educational Statistics of the Republic of China, 1980, p. 15.

[121] Special Education in the Republic of China, pp. 2-3.

With the exception of such special courses as Braille and orientation and mobility, the general curriculum at Chi-Ming and the other schools for the blind is identical to other public schools. The period of study is also identical to that of regular public schools. In terms of vocational training, all students at Chi-Ming are required to study massage techniques, since the majority are eventually employed in this type of work. Other vocational subjects that students may select--based on interest and ability--are braille printing, carpentry, electrotherapy, light engineering, musical instrument training, piano tuning, and switchboard operation.

While a few students of Chi-Ming continue their education in colleges or universities, the majority enter the work force upon graduation. Chi-Ming's faculty includes several visually handicapped teachers. These teachers, as well as all other public school teachers, are required to complete regular teacher education programs for teacher certification; in addition, these teachers must complete 20 credit hours of instruction in education for the blind and visually handicapped at the National Taiwan Normal University to receive certification as special education teachers of the blind.

Since Chi-Ming is a residential school, students live, work, play, and study in the environment of their institution. Students do return to their homes on holidays and vacations. While some partially-sighted students do choose to attend regular public schools, the blind students in the special schools for the blind are not "mainstreamed"--or integrated--into regular schools or classes during their 12 years of education.

Mentally retarded. While there is one special school for mentally retarded children, there are 26 junior high schools throughout Taiwan that provide special classes--although segregated from other children--for these students.

A visit to Nan-Men Junior High School in Taipei was made. The five major objectives of this school, which incorporated special programs for mentally retarded students in 1973, are as follows:[122]

1. to allow students to know the value of themselves
2. to help students become independent
3. to teach students how to get along with people
4. to train students with skills to be responsible citizens

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[122] Translated from Introduction to EMR Class at Nan-Men Junior High School, Research Committee of EMR Teaching, April 1980, p. 9.

5. to teach for economic effectiveness and livelihood skills

Nan-Men Junior High School's program for the mentally retarded currently has 36 girls enrolled, although boys will be admitted in September of 1981. Eligibility for admission to this and other special schools is an intelligence quotient (IQ) of between 50 and 75, as revealed by tests administered to all entrants to junior high school.

There are a very few special classes in the primary schools for low-IQ students; however, no information was available on how such students are identified and routed to the special classes. Essentially, then, it seems that while such students have likely been identified in primary school as "slow learners" or "mental retardeds," no special training, classes, or assistance is provided until junior high school--when they are formally identified through the IQ tests given prior to placement in junior high schools. This researcher was told that although these students could not perform as well as other students during their primary school years, school officials (and the government) see fit to give these youngsters certificates of completion "to encourage them" in their studies.

As with the schools for the blind, the government provides for all instructional materials and equipment for the schools for the mentally retarded. With the exception of the one special school for mentally retarded students, the juniorhigh schools are not residential schools.

Students study the same subjects during their three years at Nan-Men as other students in the same grade in other junior high schools but at a lower level. The four basic subjects taught are as follows:[123]

1. Home economics: sewing, cooking, knitting
2. Living classroom: social skills, basic math, common sense (moral education, citizenship), human physiology, training of scouts
3. Combined classroom: natural science, languages (Mandarin and English), arts and skills, music
4. Combined teaching: regular junior high school subjects

Vocational subjects taught in the first year include knitting and cooking; in the second year, sewing, knitting, and cooking.

The curricular emphasis will no doubt have changed in September 1981 with the admission to Nan-Men of boys. Junior high school education for mentally retarded children is usually the highest level of education most will receive.

To date, Nan-Men reports that only 25 students have graduated from its program. No information was available as to why such a low number of students graduated from this school if it began special programs in 1973; what happened to the other students who had been enrolled since 1973; or did the students drop out or did they fail to meet graduation requirements. In the case of the latter, in what way did such students fail?

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[123] Translated from Teaching Evaluation of EMR Students at Nan-Men Junior High School, Research Committee of EMR Teaching, April 25, 1980.

Trends in Higher Education

Speaking on current trends and needs of higher education in the Republic of China at the Sino-American Seminars on Higher Education, Dr. Ching-jiang Lin outlined five areas of need:[124]

(1) to control the quantity by planning: Because of rapid increases in enrollments in postsecondary institutions and the high rate of unemployment among junior college graduates (12.57 percent) and university and college graduates (7.14 percent), the country as put into effect (a) "a stoppage to the establishment of new colleges and universities. . . since 1972" except for three new schools in vocational and technical education and medicine; (b) "for all the newly added research institutes, departments or curriculums, the criteria for their supplement /must be7 in accordance with the social and economical needs. . . ."; (c) the number of students admitted to research institutes or departments must be

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[124] Ching-jiang Lin, op. cit., pp. 9-15.

based on manpower prediction needs "so as to maintain a balance of demand in supply for manpower, and to avoid unemployment of the graduates;"[125] (d) implementation of different educational fields such as agriculture, oceanic studies, and teacher education.

(2) to improve quality by evaluation: "The over-expansion in quantity and the unemployment of some graduated students give rise to a demand of upgrading the academic standards."[126] This evaluation involves the quality of instruction, the teachers, curriculums, facilities, financing, and administration. Evaluation has already begun in certain schools and in certain fields of study.

(3) to adjust to external needs by modifying the school system: This refers to the lack of parity between and among the different levels of schools; that is, the number of years of study required at the various schools differs from two, three, and five years (junior colleges), four to five years (junior normal schools), etc.

(4) to improve the joint college entrance examination by research: As mentioned earlier, the JCEE is not a standardized examination. A committee of college and university presidents meet each spring and summer to determine the content of that year's examination.

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125. Ibid., pp. 9-10.

126. Ibid., pp. 10-11.

(5) to provide the future legal basis of higher education by the revision of laws: The original University Law and the Junior College Law were passed in 1948 and were revised in 1972 and 1976, respectively. It is anticipated that new laws will incorporate each of the four areas of needs listed here.

Summary

> The Republic of China is rapidly changing over to an industrial economy; specialists, professional personnel, and technicians are required by the expanding industry and commerce. . . . The concept of education as an investment is now accepted by the Chinese society. It seems undeniable that education, especially higher education, has become part of the economic foundations of modern society.[127]

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[127] Ibid., p. 7.

CHAPTER 5

FINDINGS: AMERICAN HIGHER EDUCATIONAL SYSTEM (WITH EMPHASIS ON THE CALIFORNIA HIGHER EDUCATION SYSTEM)

Structure of the American Educational System

At the federal or national level, the Department of Health, Education, and Welfare in Washington, D.C., oversees all programs in health, education, and welfare for all states and local governmental agencies. The Education Division of this Department, consisting of an Office of Education, is responsible for the coordination and supervision of educational activities of the Department.

The statutory functions of the Office of Education are:

> to collect such statistics and facts as shall show the condition and progress of education, to diffuse such information as shall aid the people of the United States in the establishment and maintenance of efficient school systems, and otherwise to promote the cause of education. . . .[128]

The programs under the Office of Education are administered by separate agencies for school systems, occupational and adult education, education for the handicapped, postsecondary education, and Indian education.

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[128] United States Government Manual, 1974-75 (Washington, D.C.: United States Government Printing Office), p. 229.

The Bureau of School Systems administers various programs of grants to various state educational agencies local school districts and financial or technical assistance programs to help school districts meet special needs.

The Bureau of Occupational and Adult Education administers

> programs of grants, contracts, and technical assistance for vocational and technical education, occupational education, career education, manpower development and training, adult education, consumer education, education professions development and drop-out prevention[129]

The role of the Bureau for Education for the Handicapped is to assist states, colleges and universities and other institutions and agencies in meeting the special education needs of handicapped children. Programs supporting training for teachers and other professionals, research grants, financial aid to help states initiate, expand, and improve resources, and media services and captioned films for the deaf are administered by this Bureau.

The Bureau of Postsecondary Education provides support and assistance programs for higher education. Grants to develop and construct public libraries, to acquire library resources are provided as well as assistance to improve and expand "American educational resources for international

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129. Ibid.

studies and services."[130]

The Office of Indian Education offers financial assistance programs to local and educational agencies to meet the special educational needs of Indian students.

A separate agency under the Department of Health, Education, and Welfare is the National Institute of Education, created in 1972. Its role is

> to provide leadership in the conduct and support of scientific inquiry into the educational process, to provide more dependable knowledge about educational quality, and to improve education, including career education.[131]

The National Institute of Education carries out its goals through

> helping to solve the problems of, and achieve the objectives of American education including equal opportunity;
>
> advancing the practice of education as an art, science, and profession;
>
> strengthening the scientific and technological foundations of education; and
>
> building an effective educational research and development system.[132]

Structure of the California Educational System

The educational system in the State of California is comprised of the following school levels:

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[130] Ibid.

[131] Ibid., p. 230.

[132] Ibid.

Kindergarten	Ages 4-5	
Elementary school	Ages 6-11	(Grades 1-6)
Junior high or Intermediate school	Ages 12-14/15	(Grades 7-8/9)
Senior high school	Ages 15-17/18	(Grades 9/10-12)
Community/junior college	(Over 18)	(Grades 13-14)
College or university		

Kindergarten-Secondary School. The public educational system and programs from kindergarten through senior high school (referred to as K through 12) are administered and regulated by each state's board of education. Each state has an elected superintendent of public instruction whose staff oversees such matters as budgets, buildings and facilities, instruction, instructional materials, and teacher certification requirements. Education is supported by taxes paid by citizens of the state. Education in grades K through 12 is compulsory, although students who reach age 16 may elect to take a proficiency examination to determine eligibility for leaving high school at that age.

Students are required to complete a prescribed program for high school graduation and receipt of a high school diploma. The following are required: English, arithmetic, science, social studies, history, government, physical education, reading, and health education. In addition to the prescribed courses, students may elect to take courses in a "major field of study," such as business, home economics, industrial studies, or general education. Students may also elect to take a college-preparatory program to meet entrance requirements for a four-year school.

Private schools with grades from K through 12 are required to meet the same educational and instructional standards as those established for the public schools at the same levels. Many of the private schools are church-affiliated, although students need not be required to belong to that religious affiliation to attend.

Community-junior colleges. Commonly referred to as Grades 13 and 14 in the school system, these two-year public and private institutions provide postsecondary education for high school graduates or for others 18 years or older who can benefit from the instruction. A low tuition is generally charged students attending these schools, which are situated in residential communities to meet the educational needs of the student population in the nearby communities (thus the name "community colleges.")

These colleges offer either or both the Associate in Arts degree and the Associate in Science degree for completion of a prescribed two-year curriculum. Upon completion of the AA or AS degree, students may transfer to a four-year institution, or they may enter the work force.

To earn an AA or AS degree, the student must complete between 56 and 72 semester hours/units of courses in general education "breadth" courses, as follows:

1. Physical Education Activity
2. Health Education
3. American Institutions, History, State and Local Government
4. Natural Science
5. Social Sciences
6. Humanities
7. Learning Skills
8. Divisional Major

While these requirements are minimum requirements, students may select additional courses to meet specific individual needs. Students planning to transfer to a four-year institution would complete additional courses to meet the admissions requirements for that institution, while students not planning to transfer would complete their major areas of study to prepare them for a vocation. Thus there is standardization within the colleges within a state as well as among institutions in other states as to the nature of the general education courses offered at the two-year schools and those courses accepted by the four-year schools for matriculation.

Most of the two-year colleges also offer certificate programs in various occupational and vocational fields. These programs require students to complete a prescribed one- or two-year curriculum that will prepare the student for a job in the field. Between 30 and 45 semester hours/units are generally required. These students may also be completing the general education courses required for the

AA or AS degree. Table 10 lists the occupational and the transfer curricula at Pasadena City College that are typical of those found in California's two-year colleges.

Until recently the public two-year colleges in the State were supported by property tax funds generated from within the communities served by the community colleges. Funding now comes from the State. These two-year public colleges in California are unique in that they are tuition-free institutions for all state residents.

As of this time, there are 107 public community and junior colleges statewide, administered by the Board of Governors of the California Community Colleges. Figure 2 shows the structure of the California Community Colleges.

Four-year colleges and universities. Both public and private four-year institutions offer bachelor's and master's degrees, teacher training programs leading to state certification, and nursing education programs leading to state certification. Doctoral programs and professional training in law, medicine, dentistry, pharmacy, architecture, and veterinary medicine are offered at the University of California.

The public sector consists of the University of California System and the California State College and University System. The former has 19 colleges and universities within the State, as shown in Figure 3.

Table 10

Occupational Curricula

The following occupational curricula prepare students for the Associate in Arts Degree from Pasadena City College and for immediate entrance into an occupation.

Accounting—Bookkeeping
Administration of Justice
Advertising Design
Air Conditioning and Refrigeration
Apparel Arts
Automotive Mechanics
Aviation Commercial Pilot
Banking and Finance
Building Construction
Business Management
Ceramics
Civil Engineering Technology
Construction Inspection
Cosmetology
Crafts
Data Processing
Dental Assisting
Dental Hygiene
Dental Laboratory Technology
Dietetic Assisting
Drafting—Mechanical Design
Drafting Design—Piping Industries
Early Childhood Teaching Assistant
Education—Instructional Associate
Electrical Technology
Electronics
Fashion Coordinating
Fire Science
Flight Attendant
Food Services
Forestry—Technical
Graphics Engineering and Technology
Handicapped Services Technology
Industrial Supervision
Interior Design
Journalism
Laser Technology
Legal Assisting
Machine Shop Technology
Medical Assisting
Merchandising-Management
Motorcycle Mechanics
Music—Commercial
Nursing
Nursing Home Administration
Office Administration—Clerical
Office Administration—Legal Secretarial
Office Administration—Secretarial
Office Administration—Word Processing
Photography
Product Design
Purchasing and Contracting
Radiologic Technology
Real Estate
Recreation Assisting
Studio Arts
Tax Studies
Telecommunications—Broadcast Journalism
Telecommunications—Operations
Telecommunications—Radio Controls
Telecommunications—Television Controls
Theater Arts—Acting
Theater Arts—Theater Technology
Travel Agency Operation
Welding

The student should see the PCC Bulletin for a listing of the course requirements for each of these majors. Upon completion of the courses listed under requirements for the major with a C or better average, a student may file a petition in the Records Office for issuance of a Certificate of Achievement.

Transfer Curricula

The transfer curricula normally reflect requirements for Junior standing in nearby public institutions—the University of California, Los Angeles or California State University, Los Angeles. Requirements of other public four-year institutions will be similar, but students should consult the catalog of the college or university to which they expect to transfer, whether it is public or private. The organized curricula in the college are for those majors most commonly selected by Pasadena City College students. A qualified student can complete at the college the lower division requirements for almost any major offered by a four-year institution. These curricula lead to the Associate in Arts degree.

Anthropology
Architecture
Art
Astronomy (see Mathematics)
Biological Sciences
Business Administration
Business Education
Chemistry
Chicano Studies
Child Development
Chiropractic
Computer Sciences
Criminal Justice
Dental Hygiene
Dentistry
Economics
Engineering
Engineering Technology
English
Ethnic Studies
Foreign Languages
Forestry
Geography
Geology and Geophysics
Gerontology
History
Home Economics
Industrial Arts Teaching
Journalism
Latin American Studies
Law
Librarianship
Mathematics and Astronomy
Medical Technology
Medicine
Music
Music Therapy
Nursing—Transfer
Occupational Therapy
Oceanography
Optometry
Pan-African Studies
Pharmacy
Philosophy
Physical Education
Physical Therapy
Physics
Political Science
Psychology
Radio and Television Broadcasting
Recreation
Rehabilitation Counseling
Religious Studies
Social Science
Sociology
Spanish
Speech
Speech Pathology
Teaching
Theater Arts
Urban Studies
Veterinary Medicine

The student should see the PCC Bulletin for a listing of the course requirements for each of these majors.

Majors or professions, not in the bulletin's list of organized transfer curricula, for which most lower division requirements can be met at Pasadena City College.

Agriculture
Archaeology
Architectural Landscaping
Armed Services
Chiropody
Cinematography
Data Processing
Fisheries
Game Management
General Humanities
Industrial Design
Industrial Management
Meteorology
Mortuary Science
Physical Science
Public Health
Religious Education
Sanitary Engineer
Theology
X-Ray Technology

STRUCTURE OF THE CALIFORNIA COMMUNITY COLLEGES

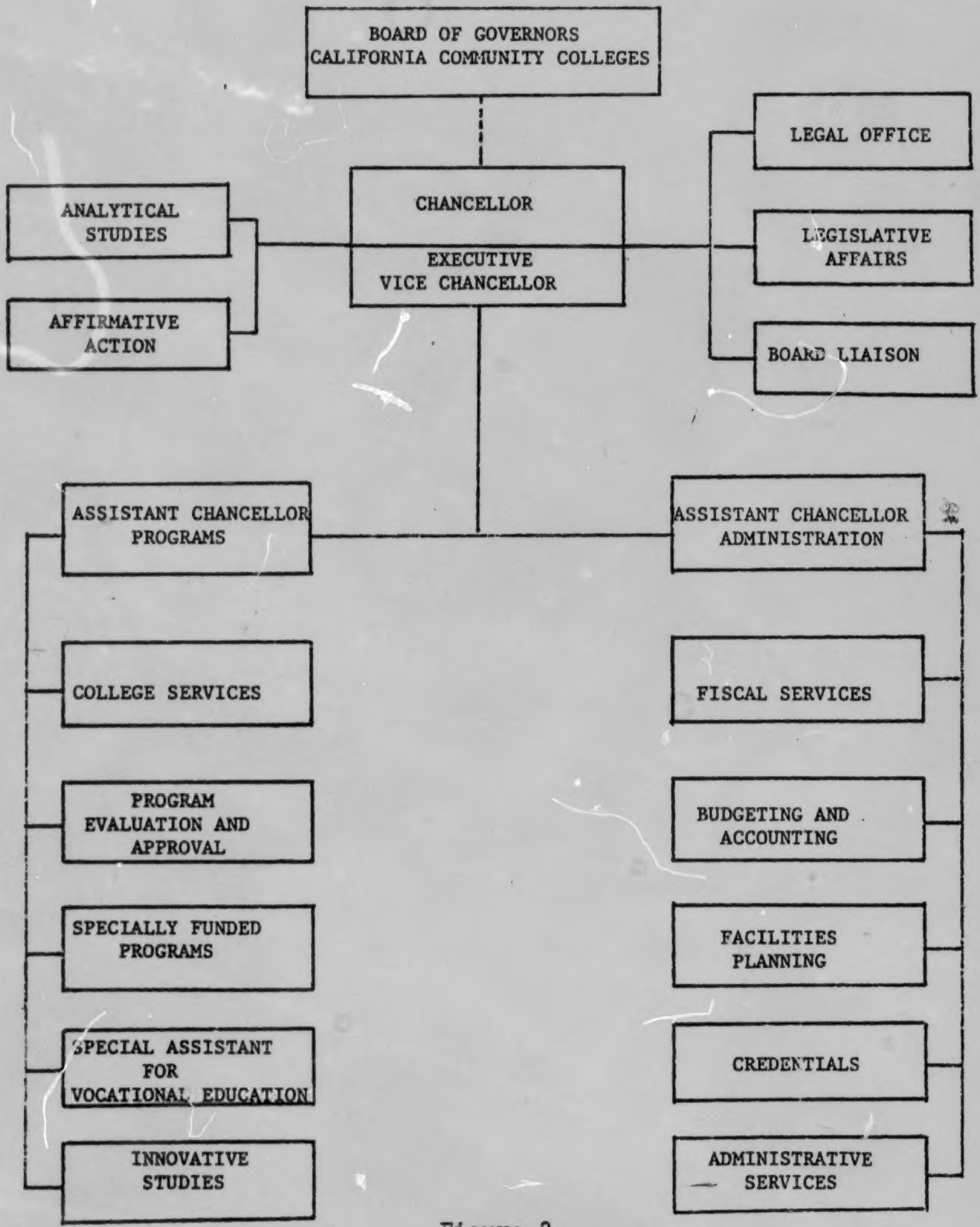
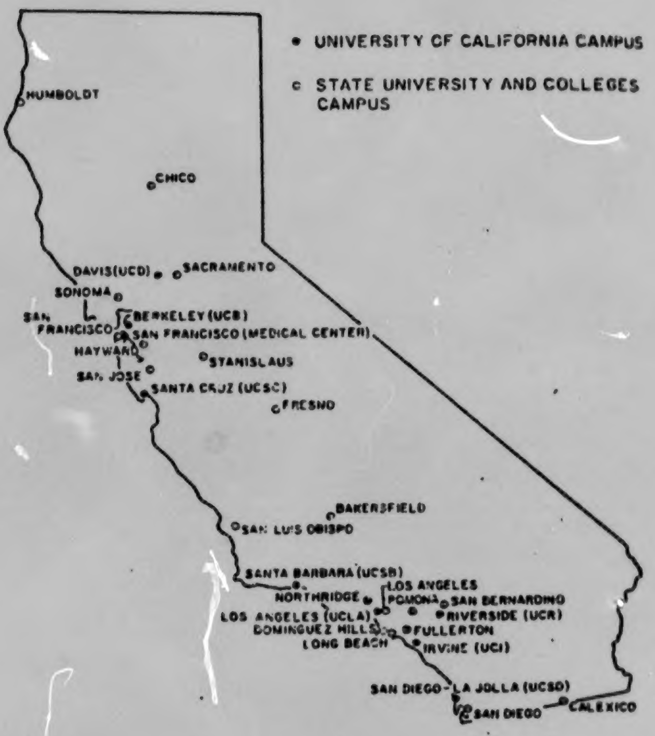

BOARD OF GOVERNORS
CALIFORNIA COMMUNITY COLLEGES
LEGAL OFFICE
ANALYTICAL STUDIES
CHANCELLOR
EXECUTIVE VICE CHANCELLOR
LEGISLATIVE AFFAIRS
AFFIRMATIVE ACTION
BOARD LIAISON
ASSISTANT CHANCELLOR PROGRAMS
ASSISTANT CHANCELLOR ADMINISTRATION
COLLEGE SERVICES
FISCAL SERVICES
PROGRAM EVALUATION AND APPROVAL
BUDGETING AND ACCOUNTING
SPECIALLY FUNDED PROGRAMS
FACILITIES PLANNING
SPECIAL ASSISTANT FOR VOCATIONAL EDUCATION
CREDENTIALS
INNOVATIVE STUDIES
ADMINISTRATIVE SERVICES

Figure 2

Figure 3

PUBLIC FOUR-YEAR AND GRADUATE INSTITUTIONS IN CALIFORNIA


● UNIVERSITY OF CALIFORNIA CAMPUS
○ STATE UNIVERSITY AND COLLEGES CAMPUS
HUMBOLDT
CHICO
DAVIS(UCD)
SACRAMENTO
SONOMA
SAN FRANCISCO
BERKELEY (UCB)
SAN FRANCISCO (MEDICAL CENTER)
HAYWARD
STANISLAUS
SAN JOSE
SANTA CRUZ (UCSC)
FRESNO
BAKERSFIELD
SAN LUIS OBISPO
SANTA BARBARA (UCSB)
LOS ANGELES
NORTHRIDGE
POMONA
SAN BERNARDINO
LOS ANGELES (UCLA)
RIVERSIDE (UCR)
DOMINGUEZ HILLS
FULLERTON
LONG BEACH
IRVINE (UCI)
SAN DIEGO - LA JOLLA (UCSD)
SAN DIEGO
CALEXICO

Source: Irving G. Hendrick, California Education: A Brief History (San Francisco: Boyd & Fraser Publishing Company, 1980).

The State Universities and Colleges accept first-time freshmen students from the top one-third of the high school graduates. Other students, including those transferring from two-year community and junior colleges, are admitted based on entrance examination scores, high school grades (where applicable), degree objective, etc. While these postsecondary schools are tuition-free also, they charge fees ranging from $67 to $88 per quarter (three-month terms) to $113 to $121 per semester (18-week or four-month terms).

These institutions offer bachelor's and master's degree programs; however, some also offer joint doctoral programs with certain University of California institutions.

The University of California System consists of eight universities throughout California as illustrated in Figure 3. These institutions admit the top one-eighth of the graduates of California public high schools. It is at these universities that research is conducted and where instruction in law, medicine, dentistry, veterinary medicine, pharmacy, and architecture is provided.

The University of California is governed by a Board of Regents, with members selected by the Governor of the State of California. Education provided at these universities is also tuition-free, although fees ranging from $714 to $762 per year are charged; graduate students pay a slightly higher fee for their course work.

As of June 1978, there were 260 private or independent colleges and universities in California.[133] The total enrollment in these schools in the Fall of 1976 was 176,413 students. At the approximately 60 institutions belonging to the Association of Independent California Colleges and Universities, there was a total enrollment of 167,000 in 1981, including 93,000 undergraduates and 65,000 graduates and professional level students.[134]

The median enrollment at the private institutions is 1,275 students, with most schools being coeducational and some being affiliated with a religious denomination. Tuition ranges from $2,000 to $7,140 per year.[135]

These independent schools offer a diversity of programs that are not usually found in the public institutions. For example, there are approximately 60 private degree-granting institutions in California that offer training and degrees in religion and theology. Other programs offered are in chiropractic medicine and specialized fields in business and management, fine and applied arts, psychology, and education.[136]

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[133] State Policy Toward Independent Postsecondary Institutions (Sacramento: California State Postsecondary Education Commission, June 1978), p. 6.

[134] Counselor's Directory, Independent California Colleges and Universities (Santa Ana, CA: Association of California Independent Colleges and Universities, 1981).

[135] Ibid.

[136] State Policy Toward Independent Postsecondary Institutions, op. cit., p. 7.

Figure 4 shows the locations throughout California of the approximately 60 member institutions of the Association of Independent California Colleges and Universities.

Summary. Table 11 shows the distribution of total enrollment in degree-granting institutions in California between the Fall of 1962 and the Fall of 1976.

Stating that an "educational revolution" has taken place among the American population during the middle of the 20th Century, Mare cites the following statistics showing the median grades in school completed by adults:

Year	Median Grades[137]
1940	8.6
1950	9.3
1960	10.5
1970	12.2
1978	12.4

These figures show that, since schooling is typically attained during childhood, teen, and young adult years, education among Americans has been attained at normal levels of the current adult population.

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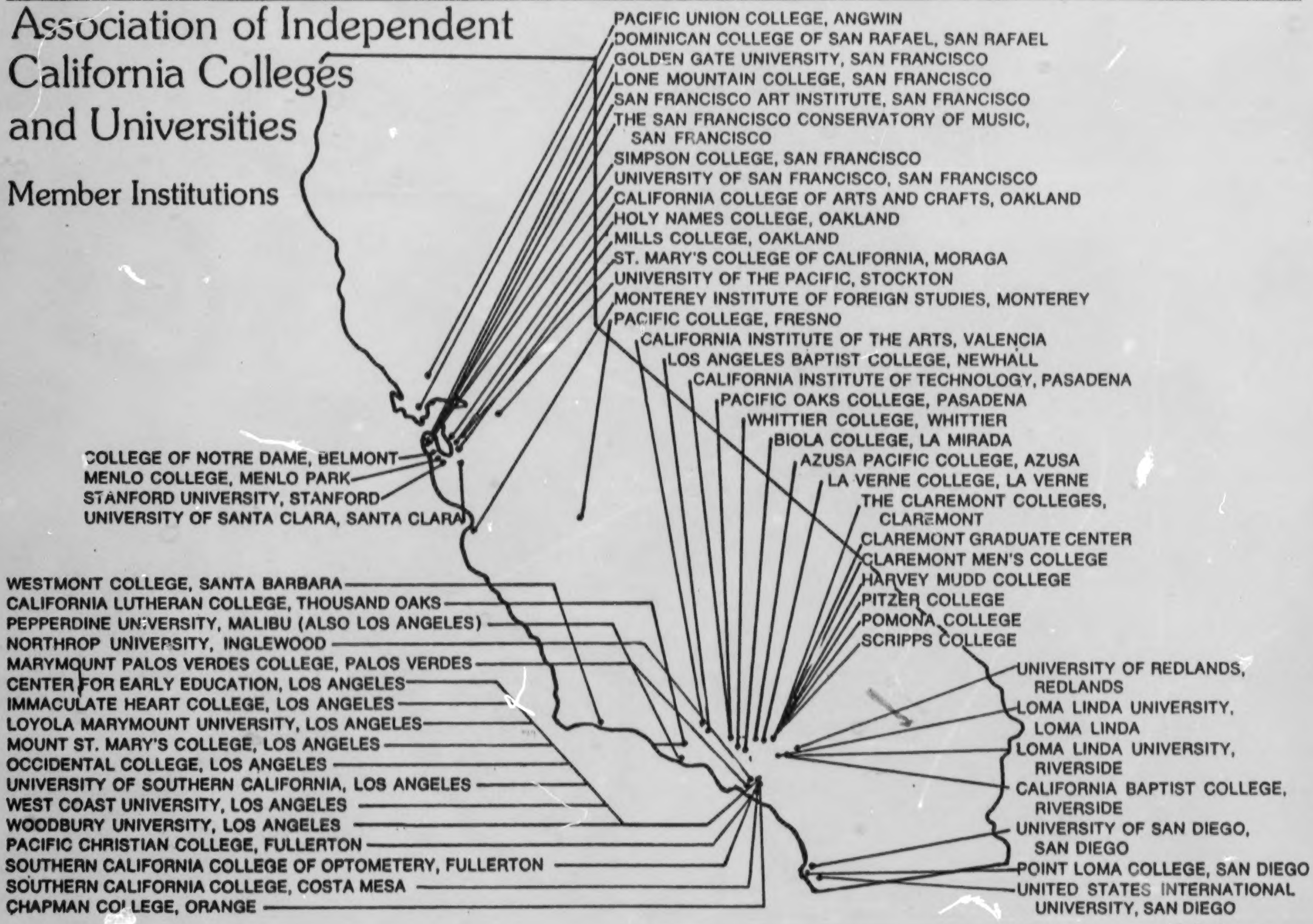
[137] Robert D. Mare, op. cit., p. 99.

FIGURE 4



Association of Independent California Colleges and Universities

Member Institutions

PACIFIC UNION COLLEGE, ANGWIN
DOMINICAN COLLEGE OF SAN RAFAEL, SAN RAFAEL
GOLDEN GATE UNIVERSITY, SAN FRANCISCO
LONE MOUNTAIN COLLEGE, SAN FRANCISCO
SAN FRANCISCO ART INSTITUTE, SAN FRANCISCO
THE SAN FRANCISCO CONSERVATORY OF MUSIC, SAN FRANCISCO
SIMPSON COLLEGE, SAN FRANCISCO
UNIVERSITY OF SAN FRANCISCO, SAN FRANCISCO
CALIFORNIA COLLEGE OF ARTS AND CRAFTS, OAKLAND
HOLY NAMES COLLEGE, OAKLAND
MILLS COLLEGE, OAKLAND
ST. MARY'S COLLEGE OF CALIFORNIA, MORAGA
UNIVERSITY OF THE PACIFIC, STOCKTON
MONTEREY INSTITUTE OF FOREIGN STUDIES, MONTEREY
PACIFIC COLLEGE, FRESNO
CALIFORNIA INSTITUTE OF THE ARTS, VALENCIA
LOS ANGELES BAPTIST COLLEGE, NEWHALL
CALIFORNIA INSTITUTE OF TECHNOLOGY, PASADENA
PACIFIC OAKS COLLEGE, PASADENA
WHITTIER COLLEGE, WHITTIER
BIOLA COLLEGE, LA MIRADA
AZUSA PACIFIC COLLEGE, AZUSA
LA VERNE COLLEGE, LA VERNE
THE CLAREMONT COLLEGES, CLAREMONT
CLAREMONT GRADUATE CENTER
CLAREMONT MEN'S COLLEGE
HARVEY MUDD COLLEGE
PITZER COLLEGE
POMONA COLLEGE
SCRIPPS COLLEGE
UNIVERSITY OF REDLANDS, REDLANDS
LOMA LINDA UNIVERSITY, LOMA LINDA
LOMA LINDA UNIVERSITY, RIVERSIDE
CALIFORNIA BAPTIST COLLEGE, RIVERSIDE
UNIVERSITY OF SAN DIEGO, SAN DIEGO
POINT LOMA COLLEGE, SAN DIEGO
UNITED STATES INTERNATIONAL UNIVERSITY, SAN DIEGO
COLLEGE OF NOTRE DAME, BELMONT
MENLO COLLEGE, MENLO PARK
STANFORD UNIVERSITY, STANFORD
UNIVERSITY OF SANTA CLARA, SANTA CLARA
WESTMONT COLLEGE, SANTA BARBARA
CALIFORNIA LUTHERAN COLLEGE, THOUSAND OAKS
PEPPERDINE UNIVERSITY, MALIBU (ALSO LOS ANGELES)
NORTHROP UNIVERSITY, INGLEWOOD
MARYMOUNT PALOS VERDES COLLEGE, PALOS VERDES
CENTER FOR EARLY EDUCATION, LOS ANGELES
IMMACULATE HEART COLLEGE, LOS ANGELES
LOYOLA MARYMOUNT UNIVERSITY, LOS ANGELES
MOUNT ST. MARY'S COLLEGE, LOS ANGELES
OCCIDENTAL COLLEGE, LOS ANGELES
UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES
WEST COAST UNIVERSITY, LOS ANGELES
WOODBURY UNIVERSITY, LOS ANGELES
PACIFIC CHRISTIAN COLLEGE, FULLERTON
SOUTHERN CALIFORNIA COLLEGE OF OPTOMETERY, FULLERTON
SOUTHERN CALIFORNIA COLLEGE, COSTA MESA
CHAPMAN COLLEGE, ORANGE

TABLE 11

DISTRIBUTION OF TOTAL ENROLLMENT IN CALIFORNIA COLLEGES AND UNIVERSITIES

(Fall 1962 to Fall 1976)

	Community Colleges		State Univ./Colleges		Univ. of California		Independent Schools	
Year	Enrollment	Percent	Enrollment	Percent	Enrollment	Percent	Enrollment	Percent
1962	336,704	57.8%	110,057	20.3%	58,616	10.0%	69,168	11.9%
1963	368,008	57.7	133,108	20.8	64,504	10.1	72,590	11.4
1964	411,338	58.2	140,954	21.0	71,267	10.1	75,407	10.7
1965	459,400	59.4	154,887	20.0	79,437	10.3	80,107	10.3
1966	487,458	58.9	169,520	20.5	86,406	10.5	83,426	10.1
1967	521,695	58.4	185,601	20.8	95,376	10.7	90,797	10.1
1968	568,147	58.2	211,653	21.7	98,780	10.1	97,141	10.0
1969	602,917	57.5	224,897	21.5	104,035	10.1	114,583	10.9
1970	651,997	58.2	241,559	21.6	109,033	9.7	117,891	10.5
1971	694,790	59.6	262,081	22.5	108,033	9.3	100,187	8.6
1972	710,093	58.1	276,737	22.6	110,578	9.0	125,575	10.3
1973	851,311	61.3	286,633	20.7	118,854	8.6	130,733	9.4
1974	958,530	64.2	291,542	19.5	122,597	8.2	120,201	8.1
1975	1,101,548	64.2	310,091	18.1	128,486	7.5	175,085	10.2
1976	1,262,478	67.5	303,734	16.2	128,648	6.9	176,413	9.4

Source: *State Policy Toward Independent Postsecondary Institutions* (Sacramento: California State Postsecondary Education Commission, June 1978).

University/College Entrance Requirements

High school students planning to enter a four-year college or university are required to take in their senior year of high school one or more of the standardized entrance examinations required by the specific institutions.

The Admission Testing Program of the College Board is a testing program developed by the Educational Testing Service, Princeton, New Jersey. This programs includes the Scholastic Aptitude Test (SAT), the Test of Standard Written English (TSWE), and the Achievement Tests.

The Scholastic Aptitude Test contains two verbal and two mathematical sections. The verbal questions measure the student's ability to comprehend what is read and to use and understand the vocabulary. The mathematical questions measure the student's ability to solve problems that involve arithmetic reasoning, algebra, and geometry.

The Test of Standard Written English, taken with the Scholastic Aptitude Test, measures the student's ability to recognize standard written English. This test is intended also to help colleges and universities identify and assist those students who may need help in improving writing skills.

There are 14 Achievement Tests designed to measure the student's knowledge in one subject area and his or her ability to apply that knowledge. Achievement tests are offered in the following areas: American History and Social Studies, Biology, Chemistry, English Composition, European History and World Cultures, French, German, Hebrew, Latin, Literature, Mathematics Level I, Mathematics Level II, Physics, and Spanish. Some institutions will specify the achievement test(s), if any, to be taken by applicants; other schools will allow the applicant to select the test(s) to be taken.

The second standardized entrance examination is that of the American College Testing Program (ACT). This four-part test covers English Usage, Mathematics Usage, Social Studies Reading, and Natural Sciences Reading. An integral part of this test includes an assessment of each applicant's education, career interests, and aptitude to guide the student through his or her college program.

Regardless of the test(s) taken, the scores are used by the institutions only as one of several measures of a student's readiness to do college-level work. The scores are used as part of the admissions and course placement process. Other considerations include the student's high school grade record, which the College Board feels is the

> best single indicator of probable college achievement; however, standardized test scores combined with high school grades often provide a better indicator than high school grades alone.[138]

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[138] Student Bulletin, 1981-82 (Princeton, NJ: The College Entrance Examination Board, 1981), p. 3.

University of California System. As mentioned previously, the University of California's eight campuses admit first-time freshmen from the top one-eighth (12-1/2 percent) of all graduates of California public high schools; that is, students directly from high school with no prior college work. Other students are admitted from private high schools, community colleges, and other four-year colleges and universities.

Students entering the University of California system as transfer students from two-year community and junior colleges, the California State College-University System, or other four-year institutions are in advanced standing; that is, they have completed a specific number of college credits with an overall grade point average of 2.0 (on a 4.0 scale). The University of California will accept up to 70 semester units of credit in transferable courses taken in a community college to satisfy the lower-division (freshmen and sophomore standing) requirements.

California State College/University System. The colleges and universities in this system admit first-time freshmen from the top one-third (33-1/3 percent) of all graduates of California public high schools as well as other students. The information in Figure 12 shows the combination of test scores (from either the SAT or the ACT) and high school grade point average that is required for entrance to any of the 19 campuses. It shows, in general,

TABLE 12

ADMISSIONS TABLE FOR CALIFORNIA HIGH SCHOOL GRADUATES

G.P.A.	A.C.T. Score	S.A.T. Score	G.P.A.	A.C.T. Score	S.A.T. Score	G.P.A.	A.C.T. Score	S.A.T. Score	G.P.A.	A.C.T. Score	S.A.T. Score	G.P.A.	A.C.T. Score	S.A.T Score
( )[1]														
3.20	11	512	2.94	16	720	2.68	21	928	2.42	26	1136	2.16	31	1344
3.19	11	520	2.93	16	728	2.67	21	936	2.41	26	1144	2.15	32	1352
3.18	11	528	2.92	16	736	2.66	21	944	2.40	27	1152	2.14	32	1360
3.17	11	536	2.91	16	744	2.65	22	952	2.39	27	1160	2.13	32	1368
3.16	11	544	2.90	17	752	2.64	22	960	2.38	27	1168	2.12	32	1376
3.15	12	552	2.89	17	760	2.63	22	968	2.37	27	1176	2.11	32	1384
3.14	12	560	2.88	17	768	2.62	22	976	2.36	27	1184	2.10	33	1392
3.13	12	568	2.87	17	776	2.61	22	984	2.35	28	1192	2.09	33	1400
3.12	12	576	2.86	17	784	2.60	23	992	2.34	28	1200	2.08	33	1408
3.11	12	584	2.85	18	792	2.59	23	1000	2.33	28	1208	2.07	33	1416
3.10	13	592	2.84	18	800	2.58	23	1008	2.32	28	1216	2.06	33	1424
3.09	13	600	2.83	18	808	2.57	23	1016	2.31	28	1224	2.05	34	1432
3.08	13	608	2.82	18	816	2.56	23	1024	2.30	29	1232	2.04	34	1440
3.07	13	616	2.81	18	824	2.55	24	1032	2.29	29	1240	2.03	34	1448
3.06	13	624	2.80	19	832	2.54	24	1040	2.28	29	1248	2.02	34	1456
3.05	14	632	2.79	19	840	2.53	24	1048	2.27	29	1256	2.01	34	1464
3.04	14	640	2.78	19	848	2.52	24	1056	2.26	29	1264	2.00	35	1472
3.03	14	648	2.77	19	856	2.51	24	1064	2.25	30	1272	( )[2]		
3.02	14	656	2.76	19	864	2.50	25	1072	2.24	30	1280			
3.01	14	664	2.75	20	872	2.49	25	1080	2.23	30	1288			
3.00	15	672	2.74	20	880	2.48	25	1088	2.22	30	1296			
2.99	15	680	2.73	20	888	2.47	25	1096	2.21	30	1304			
2.98	15	688	2.72	20	896	2.46	25	1104	2.20	31	1312			
2.97	15	696	2.71	20	904	2.45	26	1112	2.19	31	1320			
2.96	15	704	2.70	21	912	2.44	26	1120	2.18	31	1328			
2.95	16	712	2.69	21	920	2.43	26	1128	2.17	31	1336			

[1] Above 3.2 eligible with any score.

[2] Below 2.00 not eligible.

that the higher the student's grade point average, the lower the test score required for admission. High school students who are not eligibile for admission as freshmen because of low grade point averages and/or low test scores may become eligible after completing 56 semester units of college-level work elsewhere with an overall grade point average of 2.0. Such work may be completed in a community college or in another four-year institution outside the California State College/University System.

California Community Colleges. Unlike the four-year colleges and universities, the community colleges have an "open door" policy; that is, any high school graduate or anyone over 18 who can benefit from the instruction is admitted to these colleges. Many of the colleges do, however, give placement tests in English and Math to all entering students. These tests are to help determine the placement of students in appropriate levels of English and Math classes and are not used to screen out students.

Institution Accreditation Procedure

Accreditation is defined as

> A voluntary process involving an association of schools and colleges to encourage high standards of education. Accreditation indicates that the accrediting commission judges that the institution, in a manner consistent with Commission standards, offers its students on a satisfactory level the

> educational opportunities set forth in its objectives, and is likely to continue to do so.[139]

Accreditation is a voluntary, non-governmental process. Accreditation policies and procedures are developed and revised by the institutions that have been accredited by the respective agencies. The process includes an institution's requesting candidacy for accreditation, its initial accreditation, and periodic reaffirmation of its accreditation.[140]

There are five separate regional accrediting agencies throughout the United States: Western, Northwest, North Central, Southern, and Middle States. Figure 5 shows the division of states and territories of each region. Within each regional association are commissions for the various levels of institutions. For example, the Western region institutions--comprised of schools and colleges in California, Guam, Hawaii, American Samoa, Micronesia, and other Pacific Basin countries in Asia--are part of the Western Association of Schools and Colleges (WASC). WASC is comprised of the following accrediting commissions: Accrediting Commission for Schools (responsible for Grades K through 12), Accrediting Commission for Community and Junior Colleges, and the Accrediting Commission for Senior Colleges.

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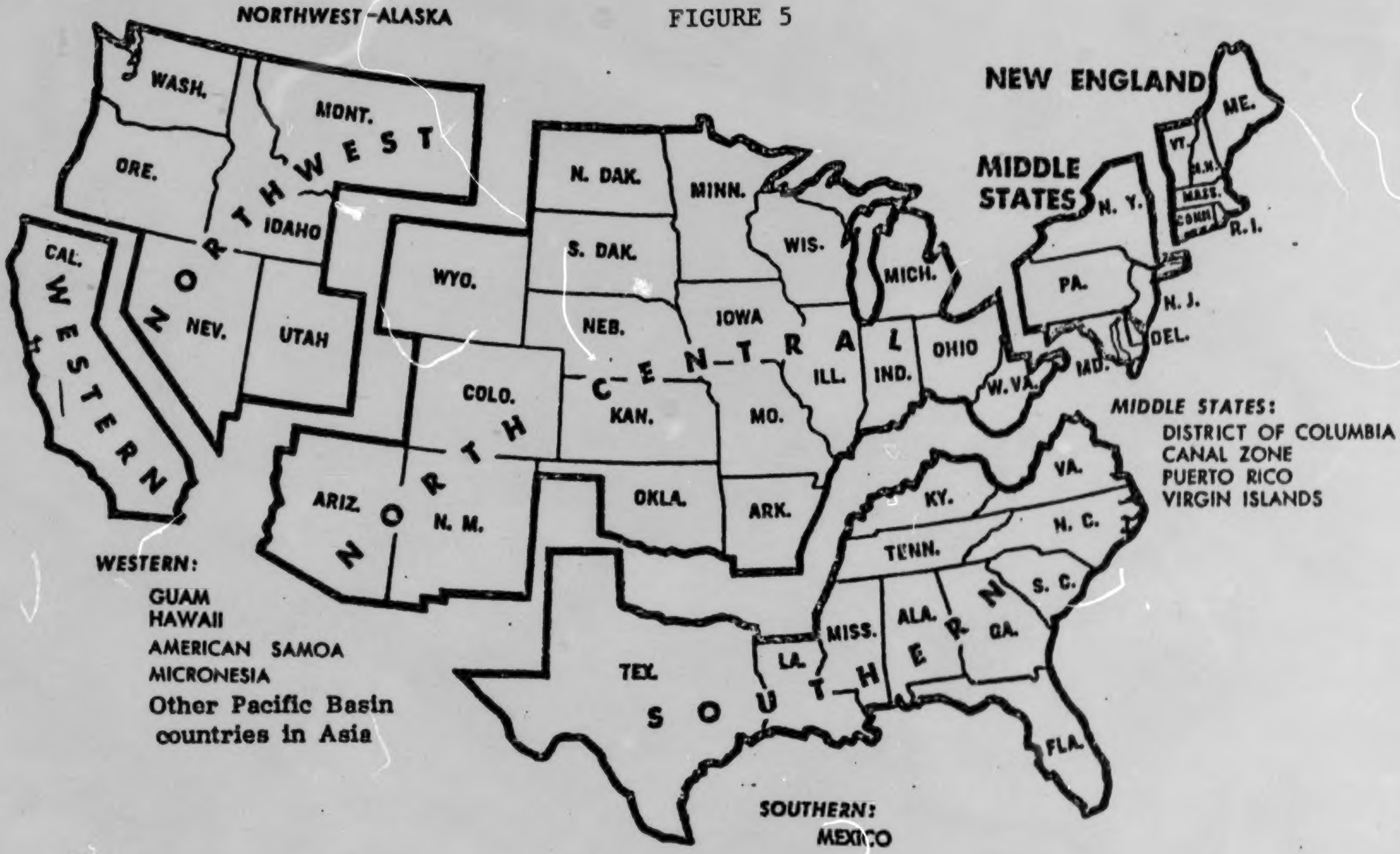
[139] *Handbook of Accreditation and Policy Manual, 1981 Edition* (Aptos, CA: Accrediting Commission for Community and Junior Colleges), p. 118.

[140] Ibid., p. 113.

FIGURE 5



NORTHWEST-ALASKA
NEW ENGLAND
MIDDLE STATES
NORTHWEST
WESTERN
NORTH CENTRAL
SOUTHERN
WASH.
MONT.
ORE.
IDAHO
CAL.
NEV.
UTAH
WYO.
COLO.
ARIZ.
N. M.
N. DAK.
S. DAK.
NEB.
KAN.
OKLA.
TEX.
MINN.
IOWA
MO.
ARK.
LA.
WIS.
ILL.
MICH.
IND.
OHIO
KY.
TENN.
MISS.
ALA.
GA.
FLA.
S. C.
N. C.
VA.
W. VA.
MD.
DEL.
N. J.
PA.
N. Y.
VT.
N.H.
ME.
MASS.
CONN.
R.I.
MIDDLE STATES:
DISTRICT OF COLUMBIA
CANAL ZONE
PUERTO RICO
VIRGIN ISLANDS
WESTERN:
GUAM
HAWAII
AMERICAN SAMOA
MICRONESIA
Other Pacific Basin countries in Asia
SOUTHERN:
MEXICO

REGIONAL ASSOCIATIONS OF THE UNITED STATES

Upon meeting specific conditions for eligibility for accreditation, an institution becomes a candidate for accreditation and must undergo the process that includes a self-study and an evaluation visit.

Self-Study. "The heart of accreditation lies in periodic self-appraisal by each member institution."[141] The self-study is a comprehensive analysis of an institution's on-going process of evaluation and planning. The self-study is begun approximately one year prior to the scheduled evaluation visit. The study contains statements of objectives and an evaluation of each of the following ten areas:

1. College goals and objectives: stated goals and objectives and whether the College is meeting them

2. Educational programs: curricular offerings and their scope, both on campus and off campus

3. Institutional staff: number of faculty and support personnel; quality of their training; personnel policies and procedures

4. Student services: facilities and support staff and their ability to meet student needs

5. Community services: cultural and educational programs, activities, and services to meet community needs

6. Learning resources: library and other student learning resource facilities, equipment, and materials;

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[141] Ibid., p. 6.

staffing of resource centers; budgeting and planning for future needs

7. Financial resources: sufficiency of funds to support institutional objectives and programs; sound fiscal planning and management

8. Physical resources: plant and facilities maintenance, planning, and development

9. College governance and administration: policies of the governing board and of administration; leadership; role of faculty and support staff in governance

10. District or system relationships: delineation of lines of authority among people within the district or within a multi-campus/multi-unit system; communications networks; and coordination of program development and evaluation, facilities planning, and budget development.

Each institution is encouraged to involve as many people as possible in the self-study--administrators, faculty, support staff, students, governing board members--so that the report represents all sectors and all views and activities of the institution.

Evaluation visit. The purpose for the evaluation visit by a team is to validate the Self-Study prepared by the institution. The Executive Director for the Commission selects a chairperson for the institution visit. This person is selected from among a list of qualified college administrators, faculty members, board members, and others who can direct the activities of the evaluation team. The team itself is selected from among those on the Commission's list; the number of members assigned to each team depends on the nature and size of the institution being evaluated.

Each member of the visitation team is assigned responsibility for one or more of the ten areas of the Self-Study. Team members are notified approximately six months in advance of their selection so they have adequate time to read and evaluate the Self-Study prior to the actual visit. During the three-day visit to the institution, team members talk with and meet with as many people on the campus as possible. The objective is to determine whether the Self-Study Report accurately reflects the conditions, objectives, and self-identified areas of need.

At the conclusion of the visit, the team compiles a written report to the Commission with its recommendation for one of the following: (1) grant accreditation initially, (2) reaffirm accreditation (if alreay accredited), (3) terminate accreditation, (4) place on probation as of a specific date, (5) deny application for accreditation.[142] If during the evaluation process, "substantive problems" within the institution are identified that need to be addressed promptly, the Commission may require and schedule interim reports and/or evaluation visits.

Once institutions have received initial accreditation for a five-year period, they are normally reevaluated every ten years thereafter. However, in the fifth year of the ten-year cycle, an institution may select one of four options for its reaffirmation:

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[142] Ibid., p. 83.

1. a comprehensive self-study and evaluation visit
2. a limited self-study and validation visit
3. an alternative special study project
4. continuing institutional research evaluation

Accreditation status to an institution has many implications. In addition to meeting the ten standards established by the accrediting agency, an institution's course credits are recognized and accepted by other accredited institutions (where appropriate); it may receive federal funds in order to offer financial assistance to students; its undergraduate degrees awarded students are recognized and accepted in graduate schools; and both undergraduate and graduate degrees awarded are accepted in the communities, by businesses, and in other states and foreign countries.

Teacher Preparation and Certification

Each state establishes its own requirements and criteria for certifying its teachers at the elementary, secondary, and postsecondary levels. In general, students preparing to teach must complete requirements for a bachelor's degree in a subject area from an accredited college or university. Part of the requirements for the degree may include specific courses in education. For all teacher candidates, there is generally a one-semester period of classroom observation and another six-month period of student teaching--both in the subject area and in a school at the appropriate level for which the person is being trained.

In the areas of special education--education for the visually handicapped, the hearing impaired, the physically handicapped, and the learning disabled--additional requirements are generally placed on the prospective teacher. They must take additional course work beyond both the bachelor's degree and the standard teaching credential to be approved to teach in one specific area of special education.

Individuals preparing to teach at the nursery school through the community college levels in California must possess a teaching credential. (California has the most rigid requirements for its teachers of the states.) In order to qualify for a teaching credential, an individual must complete a prescribed curriculum in a subject field in an accredited college or university and earn a bachelor's degree. An additional year of course work, which includes the supervised student teaching, must be completed. All campuses of the California State College and University System offer teacher education programs, and some campuses of the University of California as well.

A credential is issued by the appropriate state agency that limits teaching to specific subject areas and at a specific level of institution. While many states now require teacher candidates to take and pass teacher certification examinations prior to credentialing, California does not have such a requirement.

The requirements for a community college instructor's credential are identical to those above. However, such a credential may also be obtained if an individual has had sufficient previous work experience in an area related to the area in which he or she is to teach although he or she has little or no formal education in that area. If a community college determines that the person is qualified to teach, the college may apply directly to the Chancellor's Office of the California Community College for a credential on behalf of the individual. All community college credentials indicate the specific subject areas a teacher is qualified and certified to teach.

Teaching at the four-year colleges and universities does not require a credential. Individuals are hired by these institutions based on their particular knowledge, skill, and expertise in the subject field plus practical experience in the field as well as his or her reputation, noted publications, and research.

Because the credential requirements for California teachers are more rigid than those of other states, individuals with a California credential may teach in any other state without taking additional course work. For teachers possessing credentials from other states, however, they must complete additional course work deemed necessary to qualify them for a State of California credential. Such teachers may, however, receive "partial" or "limited" credentials from the state with the provision that they complete all course requirements within a specified time. Thus, these individuals are allowed to teach under certain conditions as are listed on their provisional credentials.

Administrators and counselors at the elementary, secondary, and postsecondary levels are also required to possess credentials. The requirements are met by individuals completing appropriate college or university courses in school administration and counseling, respectively. With these course requirements, there is also a required internship program that allows the individual to apply his or her knowledge in a local institution and to observe procedures and practices in a real administrative setting.

Teacher Ranks and Promotion

Teacher ranks at the two-year community and junior colleges and at the four-year colleges and universities are those of lecturer, instructor, assistant professor, associate professor, and professor.

These ranks are generally recognized only within institutions at the same level. For example, an assistant professorial rank earned at a community college has the same meaning and recognition at other community colleges; but it does not have the same meaning at the four-year college or university level. Each institution determines its own criteria for advancement to each higher rank, usually based on a combination of tenure, education, publication and research experience, travel, and contributions to the community and the institution. While salary is not tied to teaching rank at the community college level, it is directly tied to rank at the four-year institution.

California State College/University System. An annual evaluation of faculty members is undertaken to determine whether new faculty should be retained, whether tenure should be granted to present faculty, and whether faculty are eligible for promotion to a higher rank. This evaluation includes the faculty member's "qualities, achievements, and promise during the year or years preceding the evaluation."[143]

Three criteria are used for determining retention, tenure, and promotion within this system:

1. Instructional performance: classroom and related instructional activities; student evaluations of the

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[143] Faculty Handbook, California State University, Los Angeles, January 1980, p. 95.

faculty member; and evaluation of classroom performance by a department visitation (optional)

2. Professional achievement: academic and scholarly contributions to the profession and the field; publication or exhibition in the arts; presentations before professional societies; receipt of fellowships or grants; participation in activities of professional organizations; and significant special appointments held

3. Other contributions to the University: participation in professional activities, contribution to academic governance, production or direction of special projects, participation in community service or activities, etc.

To be hired initially, an individual must either possess a doctorate or obtain the doctorate within five years of the hiring date. Promotions in rank, then, are based on the above criteria plus receipt of tenure in the University.

California community colleges. Since Pasadena City College is representative of the community colleges in the state and in the nation, its criteria for teacher rank and promotion will be used here:

1. Credit courses (usually in graduate level work) taken that relate to the teaching assignment

2. Attendance at profiessional meetings and seminars related to the teaching assignment

3. Publication of articles or books in the field

4. Service as an officer or committee chairperson in a professional organization

5. Non-teaching work experience outside the college that relates to the college assignment

6. Travel

7. Supervision of a student teacher

8. Development and implementation of a new instructional program at the college

9. Other forms of professional growth (such as presenting a paper at a professional meeting, conducting a seminar or workshop, conducting research relating to the college assignment, etc.)

Teaching rank at Pasadena City College is awarded faculty based on the number of years of teaching within the college district as well as other criteria as follows:

Lecturer: Employed to teach 75 percent or less of a full-time load

Instructor: Employed to teach full time; possesses a California community college instructor's credential

Assistant Professor: Completed two years of full-time college teaching and attained tenured status; and (1) possesses a bachelor's degree plus 54 semester hours beyond the bachelor's degree and possesses a master's degree or possesses a master's degree plus 18 semester units; or (2) possesses 90 semester units of appropriate study and either a vocational credential or a standard designated subjects vocational credential

Associate Professor: Completed seven years of full-time college teaching and attained tenured status; and (1) possesses a bachelor's degree plus 72 semester units of appropriate study beyond the bachelor's degree and possesses a master's degree or a master's degree plus 36 semester units; or (2) possesses a bachelor's degree and either a vocational credential or a standard designated subjects vocational credential.

Professor: Completed 12 years of full-time college teaching including a minimum of four years as Associate Professor at the College and evidence of continued professional growth since becoming Associate Professor; and (1) possesses an earned doctorate or a master's degree plus 54 units; or (2) possesses a bachelor's degree plus 90 semester units of appropriate study beyond the bachelor's degree and possesses a master's degree; or (3) possesses a master's degree and a vocational credential or a standard designated subjects vocational credential.

In certain fields, such as building, construction, and related technologies, cosmetology and barbering, and building trandes where no bachelor's degree programs are offered in any college or university, special provisions for teaching rank and salary are made.

Changes in academic rank are not automatic; faculty must apply for changes and must submit supporting papers.

Teacher Compensation

Teacher salaries are determined by each school district for the elementary and secondary schools and for the community colleges. Salaries for faculty at the four-year colleges and universities (public) are determined by the state legislatures.

Salaries are dependent on the educational preparation of teachers, previous related work experience outside of education, and college credits earned after initial employment. Thus while each district has an established salary scale, teachers earn different salaries because of their particular qualifications and background of experience.

Teachers' salaries are plotted on a scale of columns and rows. As shown on Table 13 for the salary scale and requirements for Pasadena City College, the columns across the table relate to educational preparation; the rows going down the table relate to number of years of teaching experience. Thus a teacher's salary is based on both his or her educational preparation and length of time in the district.

As teachers complete degree requirements or additional course work in related areas, they may apply to their districts for a salary class change. Thus school districts are encouraging their faculty to update their knowledge and skills by rewarding them with a higher salary.

PASADENA AREA COMMUNITY COLLEGE DISTRICT

OFFICIAL SALARY SCHEDULE
CERTIFICATED BARGAINING UNIT

TABLE 13

Effective July 1, 1981

TENTHLY PAYMENT

STEP Years of Exper.*	CLASS A CA CCC Partial Fulfillment	CLASS B CA CCC Life Cred.	CLASS C I. BA+54** (Incl.MA) or MA+18**	CLASS D I. BA+72** (Incl.MA) or MA+36**	CLASS E I. BA+90** (Incl.MA) or MA+54**	DR'S DEGREE
			II. Life+18** (Incl.AA) or Equivalent***	II. Life+36** (Incl.BA or BS)	II. Life+54** (Incl.MA or MS)	
1	1,509.85	1,615.54	1,721.23	1,826.92	1,932.61	2,143.99
2	1,615.54	1,721.23	1,826.92	1,932.61	2,038.30	2,249.68
3	1,721.23	1,826.92	1,932.61	2,038.30	2,143.99	2,355.37
4	1,826.92	1,932.61	2,038.30	2,143.99	2,249.68	2,461.05
5	1,932.61	2,038.30	2,143.99	2,249.68	2,355.37	2,566.75
6	2,038.30	2,143.99	2,249.68	2,355.37	2,451.06	2,672.43
***7	2,143.99	2,249.68	2,355.37	2,461.06	2,566.75	2,778.12
======	======	======	======	======	======	======
8	2,249.68	2,355.37	2,461.06	2,566.75	2,672.43	2,883.81
9	2,355.37	2,451.06	2,566.75	2,572.43	2,778.12	2,989.50
10	2,461.06	2,566.75	2,672.43	2,778.12	2,883.81	3,095.19
11	2,461.06	2,566.75	2,778.12	2,883.81	2,989.50	3,200.88
12	2,461.06	2,566.75	2,778.12	2,883.81	3,095.19	3,306.57
13	2,461.06	2,566.75	2,778.12	2,883.81	3,095.19	3,306.57
14	2,461.06	2,566.75	2,778.12	2,883.81	3,095.19	3,306.57
15	2,566.75	2,672.43	2,883.81	2,989.50	3,200.88	3,412.26
16	2,566.75	2,672.43	2,883.81	2,989.50	3,200.88	3,412.26
17	2,566.75	2,672.43	2,883.81	2,989.50	3,200.88	3,412.26
18	2,672.43	2,778.12	2,989.50	3,095.19	3,306.57	3,517.95
19	2,672.43	2,778.12	2,989.50	3,095.19	3,306.57	3,517.95
20	2,672.43	2,778.12	2,989.50	3,095.19	3,306.57	3,517.95
21	2,778.12	2,883.81	3,095.19	3,200.88	3,412.26	3,623.64

CLASSES C, D, E (Category I)

Teachers in subject matter areas in which a Bachelor's Degree or higher is offered.

CLASSES C, D, E (Category II)

Teachers in subject matter areas in which no Bachelor's Degree is offered (see reverse).

*Initial step placement based on experience beyond that required for the credential. Double line indicates maximum limit for initial employment. Employee must serve 3/4 of a year to qualify for the next step.
(Placement of employees with credential issued prior to January 1, 1971 will be evaluated on an individual basis.)

**Semester Units (convert quarter units to semester units by multiplying by 2/3)

***60 Semester Units

TABLE 13 (Continued)

Initial placement on the schedule recognizes on a year-for-year basis, up to six years, any combination of the following: Suitable teaching experience, active military service, service in the Peace Corps, and vocational experience exceeding that required for the credential.

CLASS A
A California Community College Partial Fulfillment Credential

CLASS B
A California Community College Life Credential

CLASS C
I. MA + 18 or BA + 54 (incl. MA)(incl. Life Credential)
II. Eighteen units beyond those required for the Life Credential, including an Associate of Arts Degree (or equivalent*)

CLASS D
I. MA + 36 or BA + 72 (incl. MA) (incl. Life Credential)
II. Thirty-six units beyond those required for the Life Credential, including a Bachelor's Degree

CLASS E
I. MA + 54 or BA + 90 (incl. MA) (incl. Life Credential)
II. Fifty-four units beyond those required for the Life Credential, including a Master's Degree

DR'S DEGREE
I. Possession of an earned Doctorate from an accredited institution, or
II. Following completion of a Bachelor's Degree, graduation from a three-year program at a professionally oriented institution which is accredited by a recognized professional organization which awards accreditation to institutions of higher education for training in that profession and which institution is approved by the California Community Colleges Chancellor's Office, which degree can be translated to the equivalent of a doctorate.

CLASSES C, D, E (Category II - For Regularly Scheduled Classes)

Open only to teachers in the following subject matter areas, in which no Bachelor's Degree is offered:

Building, Construction and Related Technologies
A Building Trade
Cosmetology and Barbering
Foods, Food Services and Related Technologies
Health Technologies
Dental Assisting, Dental Laboratory Technology, and Medical Assisting
Industrial, Machine and Related Technologies
An Industrial Trade

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* 60 Semester units

Impact of Vocational-Technical Education

The Vocational Education Act of 1963 (Public Law 88-210) enacted by Congress defined vocational education and designated the creation of a State Advisory Council. The California Plan for Vocational Education evolved from that Act, which serves as a guide for college occupational programs in seeking funds for expansion, the purchase of new equipment, or the development of new programs. The Plan stipulates that there must be community involvement in developing and evaluating vocational programs by way of community advisory committees--representatives from the businesses and industries served by the college who can evaluate the programs and recommend changes.

According to the Chancellor's Office, California Community Colleges, occupational education has as its goals the following:

1. preparation of students for employment in occupations
2. counseling of students in making occupational choices
3. assistance of those students already employed in acquiring more skills to maintain their level of employment, to advance, or to change employment fields
4. development of consumer education and homemaking skills
5. development of ideas, skills, and proficiencies

in new and emerging occupational opportunities; and

6. recognizing the continuing need for counseling related to occupational skills and opportunities.[144]

Vocational-occupational-technical education is provided in high schools, regional occupational centers and programs, vocational high schools, and community colleges. Regional occupational centers are special educational facilities equipped and staffed to offer vocational training in several different fields, usually specialized in certain areas of skills because of the cost of equipment and supplies. Regional occupational centers are a variety of programs that are offered in existing facilities throughout the community--schools, churches, banks, businesses, etc.

A number of high schools have been established that offer both regular high school courses and specialized vocational training primarily in the industrial arts fields.

The most popular place for vocational training is at the community colleges. Because of the bleak employment outlook for persons with the Ph.D. degree, Burn states

> more students now see higher education as preparation for a job rather than as a foundation for life in all its dimensions; they seek "knowledge for use."[145]

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[144] Albert J. Reindeau, The Role of the Advisory Committee in Occupational Education in the Junior Colleges (Washington, D.C.: American Association of Junior Colleges, 1967), p. 19.

[145] Burn, 1980, op. cit., p. 22.

Two conditions exist in postsecondary education today to emphasize the growing importance of vocational education among Americans. In 1977, 36 percent of all students enrolled in degree or credit programs were at least 25 years old. Secondly, the number of part-time students in postsecondary schools has continued to increase. In 1977, there were 4.5 million part-time students out of the 11.4 million students enrolled in colleges and universities. The former statistic means that more students from high school and those with some college background have entered the job market first and returned to or attended college later. It also shows that more people are combining education with work in order "to meet a wider range of social values, especially job relevance."[146]

The latter statistic highlights the point that the part-time students already have jobs and are pursuing postsecondary education to improve their employment situations or are attending college to qualify for better jobs.

According to a study by the College Entrance Examination Board,

> some 40 million Americans are undergoing or contemplating job or career changes and that, of these, around 24 million are already engaged in or planning to undertake further training and education. Not surprisingly, these "in transition" adults are interested in "professional programs or vocational, trade, or technical programs."[147]

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[146] Burn, Ibid.

[147] Burn, Ibid., p. 23.

The California State Legislature incorporated in the Education Code for the State a provision to encourage

> the establishment of technical, agricultural and natural resource conservation schools. . . where they are needed in order to reduce the number of school dropouts, combat juvenile delinquency, and to provide more skilled and trained workers.[148]

This legislation came about because

1. young people who drop out of high school do not receive a minimum education that would prepare them for employment; thus they have limited opportunities because of their lack of training and skills

2. these young people are involved in juvenile delinquency and in other youth offenses in disproportionate numbers to other young people

3. these young people constitute a large number on welfare rolls

4. there is a shortage of skilled and trained workers due to rapid technological changes in the nation, and many of the young people who may not have aptitudes for academic studies may be suitable for vocational training to fill the needs

5. many of the young people would benefit from technical, agricultural, and resource conservation training so they can become independent, productive workers and citizens[149]

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[148] Annotated California Codes, Education Code (Reorganized) (St. Paul, MN: West Publishing Co., 1978), pp. 155-156.

[149] Ibid.

The impact of vocational education at Pasadena City College--again typical of most of the community-junior colleges in the nation--is that out of the approximately 25,000 student population, an estimated 50 percent are enrolled in vocational-occupational-technical programs.

The Impact of Education for the Handicapped

The State of California designated as a priority for the 1977 through 1982 period vocational education and career development for individuals with exceptional needs (handicapped persons). Such action resulted from federal and state legislation and regulations, as well as interest of individuals on behalf of handicapped persons.

Three pieces of federal legislation that impacted vocational education for handicapped students are as follows:

Vocational Rehabilitation Act of 1973: This Act specifies that

> No qualified handicapped student shall on the basis of handicap be excluded from participation in. . . any. . . occupational training program.[150]

This Act covers disabled persons attending preschool, elementary, secondary, adult education, and postsecondary levels of school.

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[150] Project FIVE-H, Formula for Improving Vocational Education for the Handicapped (California State Department of Education, 1978-79), p. LR-3.

Education for All Handicapped Children Act: This Act specifies that

> Each public agency shall take steps to insure that its handicapped children have available to them the variety of educational programs and services available to non-handicapped children in the areas served by the agency, including art, music, industrial arts, consumer and homemaking, and vocational education.[151]

This Act applies to students 3 to 21 years in public elementary and secondary schools and to students who have been placed in private schools by a public agency. Students 18-21 years were covered under this law beginning in 1980, thus extending privileges into postsecondary education.

Vocational Education Act of 1976: Provisions in this Act provide that at least 10 percent of each state's annual/fiscal allotment be used to pay the cost of vocational education for handicapped persons.[152]

Compliance with the various regulations includes a plan of vocational education within a handicapped student's educational program; therefore, a student's vocational skills must be assessed and that student's individualized education program (IEP) should include statements as to (1) the student's present level of educational performance, including academic achievement, social adaptation, prevocational and vocational skills, psychomotor skills, and self-help skills; (2) the specific vocational services needed by the student; and (3) the career and vocational education program in which the student will participate.

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[151] Ibid.

[152] Ibid.

The primary emphasis of these legislative acts

> is the placement of handicapped students with students who are not handicapped and in a regular learning environment. . . known as "mainstreaming."[153]

Additional rights of the handicapped are that they must receive proper counseling services at all levels of education, counseling emphasizing their abilities and interests rather than their handicap, and program access; this means facilities must be made accessible to the handicapped students--architectural barriers must be removed to allow handicapped students to move about from room to room or building to building without interference or inconvenience.

The effect of "mainstreaming" handicapped students in regular classrooms is to integrate them with society so they can function within society and contribute their talents and skills as productive citizens. Federal, state, and local funds are provided annually--as are vocational education funds--to provide special assistance in the way of specially trained counselors and coordinators of the handicapped, special equipment and supplies, and special tutorial help. For the blind and visually handicapped, special equipment is provided to help those with some vision read the printed page; large-print books are often available; tape recorders are lent to students so they can record classroom lectures and discussions; student assistants are hired by the college to read textbooks and other printed materials to the visually impaired.

For the hearing impaired, interpreters trained in sign language accompany the students to their classes and interpret the teachers' lectures and classroom discussions. This gives the hearing impaired students a chance to participate in the discussion as well.

For the physically handicapped, architectural barriers have been removed so wheelchairs can gain access to all buildings without undue inconvenience.

In California, the State Board of Education and the Board of Governors of the California Community Colleges adopted the following statement of purpose:

1. Seek out individuals with exceptional needs and provide them an education appropriate to their needs.

2. Work cooperatively with other public and private agencies to assure appropriate education for individuals with exceptional needs from the time of their identification.

3. Offer special assistance to exceptional individuals in a setting which promotes maximum interaction with the general school population and which is appropriate to the needs of both.

4. Assure that schools evaluate the results of the vocational education programs in terms of the growth and

> development of exceptional individuals participating in these programs.
>
> 5. Vocational education must be considered in the context of the public educational system as a vital resource, along with services such as compensatory education, special education, and remedial reading instruction, enables the educational system to meet the special needs of individuals with a wide range of learning abilities.[153]

While only specially trained and credentialed teachers and counselors are prepared to teach and work with the various types of handicapped students in specialized areas such as living skills and mobility training, it is the responsibility of all subject-matter teachers as well to help mainstream these exceptional students in their classrooms.

Summary

The structure of the American higher education system in America is unique because of the different levels of institutions that are available to meet the diverse needs of a diverse population of school-age and adult learners. California's higher educational system is typical of other states' systems in most respects--having a three-level hierarchy, the University of California system, the California State University and College System, and the California Community College system. This state's educational system is not typical of other states' in that all of its public colleges and universities remain tuition-free.

The role of the American community and junior college is an impressive one. Statistics show that while approximately 50 percent of the students enrolled in these two-year colleges are in vocational-occupational-technical programs, the remainder are enrolled in general education/transfer level courses, in adult education classes for enrichment and avocational purposes, in developmental-remedial courses, and for refresher or "continuing education" courses, or a combination of these programs.

There is cooperation and reciprocity between and among the various levels of institutions in each state. There is standardization with regard to the acceptability and transferability of college credits and courses taken at one institution to another; acceptance of standardized test scores as part of the admission and placement process; on-going self-evaluation within the accreditation process completed by all institutions.

A term that has been "coined" to describe the concept of education to all Americans is lifelong learning. Learning is a lifelong, a lifetime activity that begins at birth and ceases at death. This philosophy has been evident in the course offerings of all institutions of higher education in the United States.

CHAPTER 6

COMPARISON OF THE CHINESE AND AMERICAN HIGHER EDUCATIONAL SYSTEMS

Structure of the Systems

Educational institutions and programs in both the Republic of China and the United States are administered by an agency at the national level. While the Ministry of Education in the Republic of China oversees all of the educational agencies in the country, the American system assigns authority to the respective states and then each educational system within the state. The Office of Education, Washington, D.C., administers the educational programs on the national level.

Structure of the Educational Systems

Both countries have national compulsory education. For students in the Republic of China, education is mandated from elementary through junior high school (up to age 15). In the United States, compulsory education is from elementary through high school or, in some states, until an individual reaches age 16.

Compulsory education in both countries is free, although this writer understands there may be small tuition charges of New Taiwan $700 to $1200 per semester for junior high school and senior high school education, respectively, in the Republic of China. Postsecondary education in the Chinese public schools requires a tuition except in such specialized areas as teacher education in the normal schools and the Taiwan Normal University. In the American system, tuition is charged for public postsecondary education in most states although California's system remains tuition-free.

The Chinese public schools are designed somewhat for specialization, such as teacher training, research institutes, Chinese opera, etc. The junior colleges specialize primarily in the vocational-technical areas while the four-year colleges and universities are academically-oriented. Only the four-year colleges and universities in the Chinese system offer degrees to graduates; the junior colleges are authorized to confer only diplomas.

American schools, on the other hand, provide a variety of offerings in any one institution, although there are additional schools (both public and private) that have specialized facilities, equipment, and programs for special purposes.

As shown in Figure 1, page 60, the Chinese educational system is divided into two tracks--an academic track and a vocational track. The academic track begins with junior high school students taking the Joint College Entrance Examination to determine their eligibility for admission into the regular senior high schools or the senior vocational high schools. At that point, students are "tracked" for the universities and colleges and the junior college/technical college "tracks," respectively.

No distinction is made in American education as to academic subjects versus vocational subjects. Students can pursue either academic programs or vocational programs or a combination of the two in all public high schools, community colleges, and the four-year colleges and universities.

At the postsecondary levels, Chinese students are somewhat homogeneously grouped; that is, students are within the same age ranges at any one level of schooling; having passed the Joint College Entrance Examination and having been admitted to specific departments within the respective institutions, students have similar abilities. Students are required to complete their educational programs within established time periods; that is, within four years for undergraduate work in the university or college; two, three, and five years, respectively, for the two-, three-, and five-year junior colleges. One additional year of study is allowed students completing their education in evening programs.

Postsecondary institutions across America have a diverse student population in terms of ages, ability levels, backgrounds, previous educational experience, and educational goals. With the exception of such professional fields as medicine, dentistry, and law, there is no specified period within which students must complete their programs; students can attend any of the higher educational institutions on a part-time or full-time basis, in the day or evening programs, or a combination.

The junior and community colleges are noted for their open-door policy, which allows any student to enroll--whether for credit or not and whether for a degree or not. Students may attend or return to college at any time for refresher education, vocational training or upgrading, avocational purposes, or degree purposes.

In the Chinese plan, teacher training institutions prepare teachers for the elementary and secondary levels; elementary school teachers study at the normal junior colleges while elementary school teachers study at the normal colleges and the National Taiwan Normal University. Teacher training in America can be completed at any university or college having a teacher education program, although the prerequisite for admission is a bachelor's degree.

Supplementary education--a separate level of education in specialized schools--is provided in the Chinese system for those people who did not receive elementary or secondary education or those young who are unemployed. For the American counterpart, educational opportunities are not restricted to any special school; individuals may enroll in regular high schools, adult schools, or community or junior colleges to obtain secondary school education or higher.

University/College Entrance Examinations

Entrance to the Chinese higher educational systems is based on scores on the Joint College Entrance Examination, a rigidly competitive examination given annually to high school students desiring to enter a private or a public college or university or a two-, three-, or five-year junior college or vocational-technical college.

The examination is offered in four different areas: (A) Natural Sciences and Engineering, (B) Humanities and Literature, (C) Biological, Agricultural, and Medical Sciences, and (D) Social Sciences, Law, and Business. The general information portion of the examination required of all applicants consists of Chinese, English, and the Three Principles of the People. The other three subjects on the examination depend on which of the four groupings above the student selects: (A) Mathematics A, Physics, and Chemistry; (B) Mathematics B, History, and Geography; (C) Mathematics A, Biology, and Chemistry; and (D) Mathematics B, History, and Geography.

There are only 101 institutions of higher education in the Republic of China compared to the 107 public community and junior colleges in California alone, the 19 separate campuses of the California State Colleges and University, and the eight campuses of the University of California.

Entrance to the public community and junior colleges is based on an "open door policy;" that is, any high school graduate or person over 18 years who can benefit from the instruction is admitted. No tuition is charged residents of the State at these public colleges. Entrance to the public four-year colleges and universities in the State is based on a combination of high school grade point average and score on either of the two standardized tests, the Scholastic Aptitude Test (SAT) and the American College Testing Program (ACT). In the public institutions, no tuition is charged state residents although a small fee is assessed.

Private colleges and universities that confer degrees offer the identical general education courses in addition to a varied curriculum identical and in addition to those offered in the public institutions.

Institution Accreditation

Both the Republic of China and the United States have established procedures and requirements for accrediting institutions at all levels. Both countries require that their institutions conduct period self-evaluations that include curriculum, finances, teaching and non-teaching staff, facilities, and equipment.

While accreditation in American institutions is a voluntary process based on regional accrediting agencies that are not government related, accreditation in the Republic of China is mandated by the Ministry of Education.

Teacher Preparation and Certification

Teachers in the Republic of China attend one of the specialized teacher education institutions to prepare for teaching at the elementary, junior high, senior high, and special education levels. Junior college and four-year institution teachers are not required to attend teacher training programs. Because the teacher training institutions are public, there is no tuition charged students and students are guaranteed certification and placement upon graduation. There are, however, certain restrictions and requirements placed on graduates.

In the United States, a person prepares for a teaching career by completing a bachelor's degree in a subject field. That person then must complete an approved teacher training program at any of the universities and colleges offering a teaching credential program, such training requiring a period of classroom observation and a period of actual student practice teaching. California teacher applicants are required to complete an additional year of education courses beyond the bachelor's degree in order to be qualified for State certification.

Teaching credentials are required for teaching at the preschool through community-junior college levels, each credential limiting service to a particular level of teaching and/or particular subject areas. Teachers at the four-year colleges and universities are not required to possess a teaching credential.

Teacher Promotions in Rank

There are four teaching ranks in the Chinese higher educational system: teaching assistant, lecturer, associate professor, and professor. All ranks require possession of a bachelor's degree from a university or college. The lecturer and associate professor ranks require a master's degree; and the professor rank, the doctorate. The American system provides for ranks of lecturer, instructor, assistant professor, associate professor, and professor.

Promotion to a higher rank is not automatic in the Chinese system. A research paper must be completed prior to completion of a teacher's minimum tenure requirement in an institution at a specific rank. There must also be an opening in that institution for a teacher at a higher rank before promotion can be granted.

Promotions in rank in American colleges and universities are based on a combination of factors: teaching tenure in the college or the district, degree(s) earned, and professional growth factors such as publication of books or articles, travel, additional education completed, and work experience.

Compensation

While teaching rank in the American community and junior colleges does not relate to salary, it does relate directly to salaries in the four-year colleges and universities. Salaries are determined based on levels of education attained and degrees earned, related work experience, and length of service in the college or the district.

Teacher salaries in the Chinese schools are also tied to academic rank or level in the public schools. In addition to salaries, teachers in the Chinese schools also earn a monthly ration allowance for rice, edible oil, salt, fuel, and housing.

As might be expected, there is a great difference in salaries between the two educational systems. For example, an associate professor in a Chinese college or university earns the equivalent of US$492.74 to $564.66 per month; an associate professor in a California community college earns an average of US$2,500.00 per month.

Teacher Responsibilities

The Ministry of Education has established standardized grading and evaluation policies for students' classroom performance. Individual teachers may select their own teaching methods, types of assignments, and criteria for evaluating course work that comprise 30 percent of each student's final course grade. A midterm examination, weighted at 30 percent, and a final examination, weighted at 40 percent, are required by the Ministry in all courses.

There is no standardized grading or evaluation policy for American teachers. One of the privileges enjoyed by teachers is that of "academic freedom," which allows teachers to select their own grading criteria and standards appropriate to the courses taught.

While teaching in the Chinese schools is considered a full-time job requiring specified teaching hours plus on-duty hours during the 44-hour-per-week school time, it may not be so in the American schools. At most of the colleges and universities across the nation, teachers are required to teach between 12 and 15 hours per week, to be on duty an additional five hours per week, and to participate in appropriate college or university committees an additional five hours per week.

Curricular Offerings

The curricula in the junior colleges in the Republic of China are specialized in vocational areas. The core requirements are identical from one junior college or vocational-technical college throughout the country, although the credits and class hours differ based on the individual institution and the vocational specialty offerred.

The curricula at the four-year colleges and universities are similar in terms of core requirements and departmental offerings. However, the academic standards among the Chinese institutions differ as indicated by the variance in the JCEE scores required for admission to the various institutions.

Curricular offerings in the American colleges and universities are quite varied, although there is standardization in terms of general education course requirements acceptable for transfer to other institutions, course content, credit hours, and specific courses and elective courses within each major area of study.

Vocational-Technical Education

Both countries see a great need to increase the number of vocational-technical education offerings within the institutions and a need to improve the vocational skills of the citizenry so they can be productive individuals in the labor force.

Vocational-technical education in the Republic of China is provided through the junior colleges and the vocational-technical colleges. There is no distinction made in American schools--vocational and technical training is available in the secondary schools, in the junior and community colleges, in the specialized vocational schools, and in the four-year colleges and universities as well.

Education for the Handicapped

The various groups of handicapped children in the Republic of China are basically segregated from the mainstream of life by being placed in special schools. The blind students have special residency schools while the other handicapped students attend schools during the day and return to their homes in the evenings and weekends.

For the most part, emphasis in the special schools and the special programs for the handicapped is placed on vocational training rather than academics.

In American schools, handicapped students of all types are "mainstreamed" into the regular classrooms and programs. They are provided counseling in the same ways regular students are--according to their abilities and interests and their career objectives. On-going testing and evaluation of such students are provided to ensure the proper guidance and placement of students into programs within the various levels of education.

Summary

While the United States is a little more than 200 years old, the Republic of China has celebrated only its 70th birthday. Thus, the former country has had more time and more experience at education than the latter.

This study revealed that, although the cultures, the people, and the language of the Chinese and the American are quite different, there are many similarities in the higher educational systems of the two countries. Both countries see the value and the importance of education for their citizens as a way of bettering society as a whole as well as the individual personally.

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Dr. You-Yu Bao, Director
Bureau of International Cultural and Educational Relations
Ministry of Education

Mr. Michael Chen
Associate Professor
Shih Chien College

Miss Eunice Chen
Language Center
Shih Chien College

Professor Chu
Nan-Men Junior High School

Professor Huang Ping Huang
Graduate School of Education
Chengchi University

Professor Chuan Lee
Vice President
Ming Chuan College

Father John Lee
Department of Media Communications
Fu Jen Catholic University

Miss Helen C. C. Lin, President
Shih Chien College

Professor Lin
Dean of Students
Taipei Municipal Chi-Ming School for the Blind

Mr. Mao-sung Lin
National Taiwan Institute of Technology

Miss Grace Wang
Department of Special Education
National Taiwan Normal University

Mr. Anthony Y. T. Wu
Executive Director
Language Training & Testing Center

Professor Christine Wu
Taipei Municipal Teachers College

American Educational System

Dr. Donald L. Busche, Dean
Business Sciences Division
Saddleback College

Dr. James Hirshinger
Specialist
Chancellor's Office
California Community College
Sacramento

Dr. Wilmer O. Maedke, Chair
School of Business and Economics
California State University
Los Angeles

Dr. Robert Mantovani
Career Planning
Long Beach City College
Long Beach

Dr. Richard S. Meyers, President
Pasadena City College
Pasadena

Mrs. Francesca Neumann
Coordinator
Handicapped Services
Pasadena City College
Pasadena

Mr. C. Allen Paul, Dean
Vocational-Occupational Education
Grossmont College
El Cajon

Dr. Robert E. Swenson
Executive Director
Accrediting Commission for Community and Junior Colleges
Western Association of Schools and Colleges
Aptos

Mrs. Maxine Wilson
Los Angeles City College

Dr. Kenneth Zimmer
Professor
California State University
Los Angeles

APPENDIX A

JOINT COLLEGE ENTRANCE EXAMINATION REQUIREMENTS OF SELECTED UNIVERSITIES AND COLLEGES

Group A Subject

University/College	Department	JCEE Score
National Taiwan University	Electrical Engineering	461.66
	Chemical Engineering	450.51
	Mechanical Engineering	446.74
	Civil Engineering	439.98
	Naval Architecture	435.68
	Chemistry	426.02
	Physics	424.75
	Geology	402.29
	Mathematics	400.59
	Geography	388.45
National Chiaotung University	Electronics Engineering	432.08
	Control Engineering	420.03
	Communications Engineer.	409.81
	Transport Administration	384.45
	Shipping Technology	374.83
National Tsunghua University	Industrial Chemistry	423.62
	Nuclear Engineering	413.55
	Material Science & Eng.	412.09
National Chengkung University	Electrical Engineering	408.16
	Air Engineering	397.55
	Ship Building and Ship Mechanics	396.27
	Engineering Science	391.28
	Metallurgy & Material Eng.	378.49
	Environmental Engineering	371.87
National College of Marine & Oceanic Technology	Electronic Engineering	369.66
Tunghai University (Private)	Chemical Engineering	378.82

APPENDIX A (Continued)

University/College	Department	JCCE Score
Fu Jen Catholic University	Electronic Engineering	365.13
	Chemistry	337.45
	Physics	321.30
	Mathematics	316.98
Chungyuan College of Science and Engineering	Computer Science	350.89
National Taiwan Normal University	Mathematics	349.70
	Industrial Education	344.51
Fengchia University (Private)	Auto Control Engineering	322.18
	Textile Engineering	301.86
	Applied Chemistry	295.53
	Applied Mathematics	289.88
Soochow University (Private)	Physics	298.81
	Mathematics	293.23
Chinese Culture University (Private)	Weather Science	291.08
	Marine Biology	295.78
	Geography	290.17
Chen-I Girls College of Liberal Arts & Science	Mathematics	264.39
	Chemistry	280.59
	Group B Subject	
National Taiwan University	Foreign Languages & Literature	455.80
	History	440.44
	Library Science	426.31
	Archeology-Anthropology	409.73
	Philosophy	408.89
	Chinese	434.51
National Taiwan Normal University	English	446.30
	History	426.92
	Social Education	418.73
	Arts	341.38
	Music	340.90

APPENDIX A (Continued)

University/College	Department	JCEE Score
Chengchi University	Western Languages	425.28
	Journalism	417.04
	Arabic	401.89
	Russian	400.17
	Turkish	391.46
Central University	Foreign Languages	406.97
Fu Jen Catholic University	Media Communication	387.87
	German	384.74
	French	381.34
Soochow University	English	373.96
	German	370.21
	History	367.37
	Oriental Languages	366.99
	Chinese	362.75
	Music	302.55
Chen-I Girls College	Foreign Languages	343.78
	Chinese	341.99
Tamkang University	History	354.75
	Eastern Languages	350.31
	Material Science for Education	349.34
	Spanish	353.31
Chinese Culture University	Japanese	347.04
	Russian	343.88
	Chinese Opera	219.73
	Classical Music	204.15
	Group C Subject	
National Taiwan University	Medicine	475.69
	Dentistry	433.55
	Pharmacy	429.40
	Agricultural Chemistry	428.10
	Medical Technology	424.86
	Forestry	409.95
	Botany	405.54
	Mental Science	402.64
	Horticulture	397.51
	Animal Husbandry	387.89
	Veterinary Science	378.79
National Yangming Medical College	Medicine	455.78

APENDIX A (Continued)

University/College	Department	JCEE Score
Chunghsing Univ.	Food Science	385.70
	Earth Science	365.28
	Plant Pathology	360.26
Taipei Medical College (Private)	Medical Technology	376.52
	Nursing	326.34
Chunghsing Univ.	Agricultural Education	349.44
	Entomology	342.17
National Taiwan Normal University	Biology	373.54
	Home Economics	346.49
Fu Jen Catholic University	Food and Nutrition	349.88
	Textiles	317.05
	Physical Education	234.48
	Home Economics	317.03
Chinese Culture University	Land Resources	328.74
	Silk Science	323.95
	Dance	210.14
	Group D Subject	
National Taiwan University	International Trade	460.30
	Business Administration	451.24
	Accounting	444.84
	Banking	440.55
	Economics	432.59
	Sociology	416.15
	Law	415.35
	Political Science	412.71
Chengchi University	Finance Revenue	405.38
	Statistics	[illegible]2.65
	Diplomacy	400.72
	Financial Law	399.13
	Sociology	382.09
Chunghsing Univ.	Cooperative Economics	390.31
Fu Jen Catholic University	International Trade	386.49
	Business Administration	379.83
	Accounting	378.56
	Sociology	364.07
	Law	363.32
	Social Work	360.28

APPENDIX A (Continued)

University/College	Department	JCEE Scores
Soochow University	Applied Electro-Computers	369.55
	Accounting	368.27
	Economics	366.85
	Comparative Law	360.28
	Judicial Practice	355.45
	Sociology	353.76
	Politics	348.51
Tunghai University	Social Work	365.15
	Public Affairs	360.81
Tamkang University	Banking	358.65
Chinese Culture University	Business Administration	357.34
	Accounting	355.32
	Tourism	352.23
	Law	347.77
Fengchia University	Banking	341.63
	Economics	341.10
	Banking and Insurance	339.13
Chen-I College	Accounting	334.67

Source: THE GENERAL CONDITION FOR UNIVERSITIES AND FOUR-YEAR COLLEGES, Ministry of Education and Higher Education Department, April 1978, pp. 166-189.

APPENDIX B

JOINT COLLEGE ENTRANCE EXAMINATION REQUIREMENTS OF SELECTED THREE-YEAR JUNIOR COLLEGES

Group A Subjects

Junior College	Department		JCC Score
Taiwan Provincial Taipei JC of Technology	Mechanical Engineering		365.84-395.29
	Electrical Engineering		378.84-443.35
	Electronic Engineering		359.77-380.89
	Chemical Engineering		352.85-400.52
	Civil Engineering		350.09-402.19
	Textiles		341.13-354.34
	Industrial Engineering		346.51-364.87
Taiwan Provincial Pingtung JC of Agriculture	Mechanical and Agric.		318.76-335.72
	Climatic Maintenance		316.27-337.66
	Agricultural Civil Eng.		322.41-342.10
	Agricultural Mechanical Engineering		328.89-362.12
Ming Chuan Women's JC of Business	Business Mathematics		279.52-336.13
Shih Chien JC of Journalism	Cinema Fabrication		321.57-357.85
	Print Photography		316.54-366.18
Tamsui JC of Ind. and Commercial Management	Electro-Computer		326.72-345.28
	Group B Subjects		
National Taiwan JC of Arts	Dramatics	(Male)	323.96-367.17
		(Female)	330.22-390.18
	Broadcast TV	(Male)	367.62-436.39
		(Female)	374.30-402.88
	Technological Design		329.87-408.53
	Applied Arts		325.15-398.87
	Western Painting		316.34-425.88
	Sculpture		301.90-369.32
Taiwan Provincial Pingtung JC of Agriculture	Agricultural Economics		305.64-389.11

APPENDIX B (Continued)

Junior College	Department	JCEE Score
Shih Chien Junior College of Home Economics	Home Economics	305.87-375.88
	Dress Design	315.68-409.12
	Social Work	310.18-371.27
	Music	306.37-377.05
	Arts and Crafts	249.41-419.38
Ming Chuan Women's Junior College of Commerce	Business Secretary	321.29-467.21
	Business Design	209.10-381.11
	General Public Commun.	340.07-427.61
Shih Chien JC of Journalism	Editorial Reporting	352.88-433.64
	Broadcast Television	370.92-450.06
	Library Information	329.54-412.97
	Cinema Fabrication	335.54-397.31
	Tourism Propaganda	340.35-382.74
	Group C Subjects	
Taiwan Provincial Pingtung JC of Agriculture	Plant Conservation	312.30-379.87
	Wood Utilization	311.59-348.91
	Agronomy	327.84-362.94
	Forestry	318.57-374.61
	Animal Husbandry	325.34-366.98
	Veterinary	343.22-430.52
	Agricultural Chemistry	365.16-443.50
	Food Industry	379.60-435.23
Taiwan Provincial JC of Nursing	Nursing	330.59-406.49
ShihChien JC of Home Economics	Food and Nutrition	312.63-386.21
	Group D Subjects	
Taiwan Provincial Pingtun JC of Agri.	Agricultural Economics	358.57-463.46
Shih Chien JC of Home Economics	Accounting and Statistics	313.73-376.26
	Secretarial Administration	312.36-367.57
	Banking and Insurance	319.01-345.23
	Enterprise Management	327.62-346.60
	International Trade	334.64-365.66

APPENDIX B (Continued)

Junior College	Department	JCEE Score
Ming Chuan Women's JC of Commerce	Banking and Insurance	328.90-360.94
	Accounting and Statistics	334.58-411.22
	International Trade	361.88-432.15
	Enterprise Management	346.95-395.55
	Tourism	326.04-386.91
	Applied Electro-Computer	323.01-415.56
Shih Chien JC of Journalism	Journalism Administration	349.21-422.14
	Public Administration	342.63-403.16
Tamsui JC of Ind. & Commercial Management	Industrial Management	364.26-418.17
	Enterprise Management	373.18-430.53
	Accounting and Statistics	356.64-423.50
	Banking Management	352.23-416.45
	Tourism	382.19-438.16
	International Trade	382.19-438.16
	Business Secretary	339.64-399.87
	Finance Revenue	347.88-415.59

APPENDIX C

CURRICULAR OFFERINGS IN THE CALIFORNIA STATE UNIVERSITY/COLLEGE SYSTEM

DEGREE MAJORS IN THE CALIFORNIA STATE UNIVERSITY AND COLLEGES 1981-82

Degree majors are listed alphabetically under descriptive terminology which may differ slightly from terminology used in some catalogs. An applicant should select the degree major which best represents the specific academic program sought at the campus to which application is made. The general categories of Agriculture, Business, Education, Engineering, Natural Resources, and Psychology are listed alphabetically, and specific programs within these subject areas appear as subheadings under these general headings. All other programs are listed in alphabetical order. This list does not include all concentrations, and groupings of courses other than degree majors are not shown. Please call the campus, or consult catalogs for further details. Information on credential programs appears on the final page.

Degree Major (Descriptive Titles)	Code	Bakersfield	Chico	Dominguez Hills	Fresno	Fullerton	Hayward	Humboldt	Long Beach	Los Angeles	Northridge	Pomona	Sacramento	San Bernardino	San Diego	San Francisco	San Jose	San Luis Obispo	Sonoma	Stanislaus
Undeclared Major*																				
. Freshmen/Sophomores	00000	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●
. Juniors/Seniors	00000	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●		●	●
. Postbaccalaureate Students	00000	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●
Advertising	06041				b	b/m	b			b							BA			
Afro-American/Black Studies	22111			BA		b	BA		BA	BA	BA		b	b	BA	BA	BA		BA	
Agriculture (See also Natural Resources)																				
. Agricultural Biology	01991	b										BS								
. Agricultural Business/Mgmt/Mktg.	01121	b	b		BS							BS						BS		b
. Agricultural Chemistry	01992				m															
. Agricultural Economics	01111				b							b								
. Agricultural Education & Science	01012				BS							BS						BS/m		
. Agricultural Engineering: See Engr.																				
. Agriculture, Ag. Science	01011		BS/MS		BS/MS							MS						MS		
. Agronomy, Crop Science	01021		b		b							BS						BS		
. Animal Science	01041		b		b/m							BS/m						BS		
. Dairy Science	01051				b							b						BS		
. Enology	01132				b															
. Food Science	01131				b							b						BS		
. Fruit Science and Industry (Horticulture)	01081		b		b							BS						BS		
. International Agriculture	01013											BS						m		
. Mechanized Agriculture	01161		b		b													BS/m		
. Natural Resources Management	01151							MS										BS		
. Ornamental Horticulture	01091				b							BS						BS		
. Poultry Industry	01061				b													BS		
. Range Management	0117'		b		b			BS												
. Soil Science	0103				b							BS						BS/m		
. Veterinary, Pre-	01042				b							b								
. Viticulture	01082				b															
American Studies	03131		BA			BA/MA			BA	BA/MA		BA		BA	BA/MA	BA	BA			

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*Students with undeclared majors may be admitted at class levels indicated by dot.

List compiled in June 1981; subject to change thereafter.

Degree Major (Descriptive Titles)	Code	Bakersfield	Chico	Dominguez Hills	Fresno	Fullerton	Hayward	Humboldt	Long Beach	Los Angeles	Northridge	Pomona	Sacramento	San Bernardino	San Diego	San Francisco	San Jose	San Luis Obispo	Sonoma	Stanislaus
Anthropology	22021	BA	BA/MA	BA	BA	BA/MA	BA/MA	BA	BA/MA	BA/MA	BA/MA		BA/MA	BA	BA/MA	BA/MA	BA		BA	BA
Anthropology/Geography	22992											BS								
Architecture (See also City Planning; Engr.; Landscape Arch.)	02021											BArch MArch						BArch MArch		
Art (Applied Art: See Graphic Design)	10021	b	BA/MA	BA	BA/MA	BA/MA	BA	BA/MA	BA/BFA MA/MFA	BA/MA	BA/MA	BA	BA/MA	BA	BA/MA	BA/MA	BA/BFA MA/MFA		BA	BA
Art History	10031			b	m	b/m	b		b	b	b/m			b	b/m		b/m		b	
Asian-American Studies: See Ethnic Studies																				
Asian Studies (See also East Asian)	03011								BA/MA						BA/MA					
Astronomy	19111														BA/MS	b				
Behavioral Sciences	20991	MA		BA/MA								BA	m				BA			
Bilingual/Bicultural Studies (See also Education)	16052				m	m							b	b/m	m		m			b
Biochemistry	04141	b		b		b/m	b/m		MS	BS/m			b		b	BS	b	BS		
Biology, Biological Sciences (See also Botany, Microbiology, etc.)	04011	BS	BA/MA	BA/MA	BA/MA	BA/MA	BS/MS BA	BA/MA	BA/MS	BA BS/MS	BA/MS	BS/MS	BA/MA BS/MS	BA/BS MS	BA/MA BS/MS	BA/MA* BS	BA/MA	BS/MS	BA/MA	BA/BS
Black Studies: See Afro-American																				
Botany	04021		MA		b	b/m		BA	BS	b/m		BS	b		BA/BS m	b	BA		b	b
Business Administration																				
. Accounting	05021	b	b	b	b/m	b/m	b/m	b	b/m	b/MS	b/m	b	b/m	b	b/m	b/m	b	b	b	b/m
. Agri-Business: See Agriculture																				
. Banking	05042	b														b				
. Business Administration	05011	BS MBA	BS MBA	BS MBA	BS/MS MBA	BA* MBA*	BS/MS MBA	BS MBA	BS/MS MBA	BS/MS MBA	BS/MS MBA	BS/MS MBA	BS/MS MBA	BA BS/MBA	BS/MS* MBA*	BS*/MS MBA	BS* MBA	BS MBA		BA MBA
. Business Economics	05171			b	b	b/m				b/m										
. Business Education	05012		BA			b		b/m		BS/MA	BS/m	m	b			b/m				
. Business (Management) Information Systems (See also alphabetical listing under I)	07021					b		b	b	b/m	b	b/m	b/m		b/m	b/m		b		b
. Business, Special Interest	05993									b										
. Business Statistics	05031									b	m									
. Data Processing	05991			b						b										
. Finance	05041	b	b	b	b/m	b/m	b/m	b	b/m	b/m	b/m	b	b	b	b/m	b/m	b	b	b	b/m
. Hotel and Restaurant Management	05081											BS								
. Industrial Management	05063			BS								b								
. Industrial Relations	05161		b		b		b/m			b						b		b		
. Information Systems: Listed alphabetically under I																				
. Insurance	05121				b							b	b		b					
. International (World) Business	05131		b			m				b/m			b		m	b/m	b	b		

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[1] Offered in the School of Education.

DEGREE MAJORS IN THE CALIFORNIA STATE UNIVERSITY AND COLLEGES 1982-83

Degree Major (Descriptive Titles)	Code	Bakersfield	Chico	Dominguez Hills	Fresno	Fullerton	Hayward	Humboldt	Long Beach	Los Angeles	Northridge	Pomona	Sacramento	San Bernardino	San Diego	San Francisco	San Jose	San Luis Obispo	Sonoma	Stanislaus
Business (Cont.)																				
. Management (Business)	05061	b	b	b	b/m	b/m	b/m	b	b/m	b/m	b/m	b	b	b	b/m	b/m	b	b	BA/MA	b/m
. Management Science (Operations Research/ Management Systems) See also Quantitative Methods	05072		b			b MS				BS	b/m			b						b
. Marketing (Management)	05091	b	b	b	b/m	b/m	b/m	b/m	b/m	b/m	b/m	b	b	b	b/m	b/m	b	b	b	b/m
. Office Administration	05062		b		b/m			b	b/m	b	b/m	b	b			b	b			
. Personnel Management	05151		b	b			b/m	b	b/m	b	b		b		m	b	b			b/m
. Production/Operations Mgmt.	05064						b		b/m	b	b	b	b		m					b/m
. Public Relations (Listed Alphabetically under P)																				
. Quantitative Methods (See also Management Science)	05071				b/m		m		b/m			b				b				
. Real Estate	05111	b		b	b		b	b		b	b	b	b		b/m	b				
. Small Business	05996			b			b			b						b				
. Taxation	05022					MS	MS			m										
. Transportation Management	05101				b					b						b/m				
Cell Biology	04171					b					b					b/m			b	
Chemical Physics	19081														BS					
Chemistry	19051	BS	BA	BA/BS	BA BS/MS	BA BS/MA	BA BS/MS	BA/BS	BA BS/MS	BA BS/MS	BA BS/MS	BS/MS	BA BS/MS	BA/BS	BA/MA BS/MS PhD	BA BS/MS	BA BS/MS	BS/MS	BA/BS	BA/BS
Child Development	08231	BA	BA		BS	BS				BA/MA	BA		BA	BA	BS			BS		BA
Chinese	11071															BA/MA				
City/Regional/Urban Planning	02061				MCRP							BS MUP			MCP		MUP	BS MCRP		
Classics	15041														BA	BA				
Communications (See also Speech)	06011	b	BA/MA	BA	MA	BA/MA	BA				MA	BS	BA/MA		MS		MS			b
Communicative Disorders: See Speech Path.																				
Community Services	21011		BA																	
Comparative Literature	15031					BA/MA			BA						BA	BA/MA			m	
Computer Science	07011		BS/MS	BS	b	BS/MS	BS		b	b	BS/MS	BS	BS/MS		BA/MS	BS/MS	b/MS	BS/MS	b	b
Corrections: See Criminal Justice or Social Welfare																				
Creative Writing	15071				m				b		b					b/m				
Criminalistics (Forensic Science)	19991								b	MS			BS							
Criminal Justice Administration	21051	BA	b		b/m	BA	BS		BS/MS	BS/MS			BA/MA	BA	BS/m		BS/MS		BA	b
Criminal Justice – Corrections	21052				b/m		b		b	b			BA				b			
Criminal Justice – Security	21053								b											
Criminology	22091				BS/MS												m			

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Cultural Resources Mgt.	22994			b															MA	
Cybernetic Systems	07051																MS			
Dance	10061				b	b/m	b		BA	m			b		b		b/m		b	
Dietetics and Food Administration	13061		b		b/m				BS	b/m	b	BS			b		BS/MS	BS		
Drama: See Theatre Arts																				
Earth Sciences (See also Geology)	19171		b/m	BA		BA			BS		BA	BA/BS								b
East Asian Studies	03021							BA												
Ecology/Environmental Biology (See also Environmental Studies)	04201				b	b	b/m			b	b				m/PhD	b/m	b	BS	b	
Economics	22041	BA	BA	BA	BA	BA/MA	BA/MA	BA/m	BA/MA	BA/MA	BA	BS/MS	BA/MA	BA	BA/MA	BA/MA	BA/MA BS	BS	BA	BA
Education (See also Credentials)																				
. Adult Secondary & Adult Ed.	08071									m						m				
. Bilingual-Crosscultural (See also under B)	08994	m		m		m	m			m			m	m	m					b
. Child Development	08231	BA	BA		BS	BS				BA/MA	BA		BA	BA	BS			BS		BA
. Communication Handicapped	08121				b/m			m		m	m					†	m			
. Community College Curriculum	08061														m					
. Counseling/Guidance	08261	m		m	MA	MS	MS		MS	MS	m		MS	m	MS	MS	m	m	MA	m
. Curriculum and Instruction	08291			m			m			m	m							m	m	m
. Culturally Disadvantaged	08131										m									
. Early Childhood Education	08231	m		m	m		m									m	m		m	
. Education	08011	MA	MA	MA	MA	MS	MS	MA	MA*	MA	MA	MA	MA	MA	MA/PhD	MA*	MA*	MA	MA*	MA
. Educational Administration	08271	m		m	m	m	m	m	m	m	m		m	m	m	m	m		m	m
. Educational Foundations/Theory	08211				m				m	m	m		m							
. Educational Psychology	08221						m		m	m	m					m				
. Educational Research	08241									m					m					
. Educational Supervision	08281						m			m							m	m		m
. Elementary Education	08021	m			m	m		m	m	m	m		m	m	m	m	m			m
. Gifted	08111				m					m	m									
. Health and Safety (See Health)																				
. Instructional Media (Audio-Visual)	08992		b/m						m	m	m				m	m	m			
. Learning Handicapped	08181		m	m	m		m	m		m	m		m			†	m		m	m
. Physically Handicapped	08191									m						†				
. Reading Instruction	08301	m		m	m	m	m			m	m		m	m	m			m	m	m
. School Psychology: See Psychology																				
. Secondary Education	08031	m			m			m	m	m	m		m	m	m	m	m			m
. Severely Handicapped	08201			m	m		m			m	m		m			†	m		m	
. Special Education	08081			MA	MA	m	m		MS	m PhD	m		m	m	m	m/EdD PhD	m	m	m	
. Special Education Supervision	08091									m										

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†Graduate courses corresponding to specialist credential programs are available.

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Education (Cont.)																				
Special Interest	08953	m		m						m						m		m		
Urban Education	08121									MA										
Engineering																				
Aeronautical Engineering, Aerospace and Maintenance	09021										b/m	BS			BS/MS		BS	BS		
Aeronautics (Operations)	09022																BS			
Agricultural	09031											BS						BS		
Air Conditioning, Air Pollution: See Environmental Engineering																				
Architectural	09041																	BS		
Biomedical	09051								b				MS							
Chemical	09061								BS		b/m	BS					BS/MS			
Civil	09081		BS		BS/m	b/m			CE BS/MS	b/MS	b/m	BS	BS/MS		BS/MS		BS/MS	BS		
Computer	09094								b		b/m	b								
Construction	09082																m	BS		
Electrical	09091				BS				BS/MS	b/MS	b/m				BS/MS		BS/MS	BS		
Electrical/Electronic	09093		BS			b/m						BS	BS/MS							
Electronic	09092																	BS		
Engineering	09011				BS/MS	BS/MS			BS*/MS	BS	BS/MS	MEngr	BS/MS		BS	BS	BS	MEngr		
Engineering Materials	09151								b		b/m						BS/MS			
Engineering Science	09012					b/m												BS		
Engineering Technology	09251											BS	BS					BS		
Environmental Engr.	09221										b/m	b					m	BS		
Environmental Resources	09222							BS												
Industrial and Systems	09131																BS/MS			
Industrial Management	09132								b								BS			
Industrial Engineering	09131				BS						b/m	BS						BS		
Manufacturing	09134											BS								
Mechanical	09101		BS		BS	b/m			BS/MS	b/MS	b/m	BS	BS/MS		BS/MS		BS/MS	BS		
Metallurgical	09141																	BS		
Nuclear	09201										b/m							b		
Ocean	09241								b											
Petroleum	09071											b						b		
Structural	09084					b/m											m			
Surveying and Photogrammetry	09252				BS															
Systems	09013					m					b/m									
Transportation	09083																m			
Water Pollution: See Environmental																				
Water Resources	09085																m			

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English	15011	BA/MA	BA/MA	BA/MA	BA/MA	BA/MA	BA/MA	BA/MA	BA/MA	BA/MA	BA/MA	BA/MA	BA/MA	BA/m	BA/MA	BA/MA	BA/MA	BA/MA	BA/MA	BA/MA
English as a Second Language	15081				m											m	m			
English Composition	15013	m			m			m						MA						
Entomology	04211								BA			b			b		BS			b
Environmental Studies	49011	b		b/MS		MS	BA						BA	BA			BA/BS		BA	
Ethnic Studies (includes Asian & Native American, See also Afro American & Mexican American)	22991		BA			BA					b		BA							
European Studies	03101														BA					
Expressive Arts: See Fine/Creative Arts																				
Film	10101										b					BA/MA	b			
Fine and Creative Arts (See also Art, Music, & Theatre Arts)	10011	BA														BA/MA	BA		BA	
Fire Protection Administration	21994									BS										
Foods and Nutrition: See Dietetics																				
French	11021	BA	BA	BA	BA/m	BA/MA	BA	BA	BA/MA	BA/MA	BA/MA		BA/MA	BA	BA/MA	BA/MA	BA/MA		BA	BA
Genetics	04221														m/PhD					
Geography	22061		BA/MA	BA	BA/MA	BA/MA	BA/BS MA	BA	BA/MA	BA/MA	BA/MA		BA	BA	BA/MA	BA/MA	BA/MA		BA	BA
Geology (See also Earth Science)	19141	BS	BA	b	BA/MA		BS/MS BA	BS/BA	BS/MS	BA/BS MS	BS/MS	b	BA/BS		BS/MS	BA	BA/BS MS		BA/BS	
German	11031		BA		BA/m	BA/MA	BA	BA	BA/MA		BA		BA/MA		BA/MA	BA/MA	BA		BA	
Gerontology	21043		b	b/m			b													
Government: See Political Science																				
Government-Journalism	49033												BA							
Graphic Communications (Printing)	08392				b					b								BS		
Graphic Design/Applied Art	10091					b/m			b	b	b						BS	BS		
Health and Safety Studies	08371									BA/MA			BA							
Health Care Management/Administration	12021	b/m	b		b					MS	b/m				m		b			
Health: Community and School	12011		b	b	b				b		b/m				b	b	b/m			
Health: Environmental, Occupational and Safety	12141				b/m		b			BS	b/m		b	b	BS					
Health, Public	12141								MPH		MPH				MPH		MPH			
Health Science	12011	BS		BS	BS/MS		BS		BS/MS		BS/MS			BS	BS	BS/MS	BS/MA			
History	22051	BA/MA	BA/MA	BA	BA/MA	BA/MA	BA/MA	BA/m	BA/MA	BA/MA	BA/MA	BA	BA/MA	BA/m	BA/MA	BA/MA	BA/MA	BA	BA/MA	BA/MA
Home Economics	13011		BS		BA/MS			BA	BA/MA	BA/MS BS/MA	BS/MS	BS	BA		BA/MS	BA/MA		BS/MS		
Hotel Management: See Business																				
Human Development	20993						BA		BA											

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Humanities	15991		BA	BA							BA	BA	BA	BA		BA MA				
Human Services	21042			BA		BS								BA						
India Studies	03031																		BA	
Industrial Arts	08393		BA		BA MA			BA	BA MA	BA MA					BA MA	BA MA	BA MA	BA MA		
Industrial Design	08391								BS								BS			
Industrial Technology	08394		BS		BS				BS	BS							BS	BS		
Information and Communication Studies: See Communication																				
Information Systems (See also Business)	07021					b	b	b	b	b m	b	b	b m		b m	b		b		b
Interior Design	02031								b								BS			
International Relations	22101		BA							b	b/m		b MA			BA MA				b
Italian	11041															BA MA				
Japanese	11081									BA						BA				
Journalism (See also Communications)	06021		b	b	BA/m	b m		BA	BA	BA	BA/m	b	BA		BA	BA	BA	BS		
Labor Studies	22933			BA												BA				
Landscape Architecture	02041											BS/MLA						BS		
Language Studies	15012															m				
Latin American Studies	03081		BA			BA	BA			BA MA					BA MA					
Law Enforcement: See Criminal Justice																				
Liberal Studies	49012	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA
Library Science	16011																MLS			
Linguistics	15051				BA/MA	BA MA			MA		BA/MA				BA/MA		MA			
Literature (See also English)	15021	b						m								m				
Marine Biology	04181					b			BS							b m	b m	b	b	b
Marine Science*	49022				MS*		MS*						MS*			MS*	MS*			MS*
Marriage Family Counseling	13051			MS													MS		m	
Mass Communication: See Communication																				
Mathematics	17011	BS	BA	BA	BA/MA MS	BA MA	BS/MS	BA	BA MA	BA BS MS	BA/MS BS	BS/MS	BA MA MS	BA BS	BA MA BS MS	BA MA	BA MA MS	BS MS	BA/MA BS	BA BS
Mathematics, Applied	17031		b			b m	m		b	b m	b	b	b			b		b m	b	
Medical Laboratory Technology (Clinical Science)	12231	b	b	BS		b m	b	b	b	BS	b	b	b			BS/MS	b	b	b	
Meteorology	19131															b	BS MS			
Mexican-American/La Raza Studies	22131			BA		b	BA		BA	BA MA	BA/MA		b	b	BA	BA	MA		BA	
Microbiology	04111		BA	b	BS b/MA	b m			BS MS	BA MS	b	BS	b		BA BS MS	b/m	BA MA BS	BS	b	
Music Education	10052				b	b m	m			m					BA				b	
Music (Liberal Arts)	10051	b	BA/MA	BA	BA/MA	BA MA	BA/MA	BA	BA MA	BA MA	BA/MA	BA	BA MA	BA	BA MA	BA/MA	BA MA		BA	BA
Music (Performing)	10041				b	BM MM	m		BM b	BM m	BM		BM		BM	BM MM	BM m		b	

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*Program offered at the Moss Landing Marine Laboratories at Monterey Bay. Apply to one of the campuses shown.

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Natural Resources:																				
. Fisheries	01071							BS/m												
. Forestry	01141							BS/m												
. Natural Resources Management	01151							MS										BS		
. Natural Resources Plann. & Interp.	01153							BS												
. Range Management	01171				b			BS												
. Waste Water Management	01154							m												
. Watershed Management	01152							m												
. Wildlife Management	01072							BS/m												
Natural Science	49021																BA MA			
Nursing (See also Health Sciences)	12031	BS	BS/MS		BS/MS	BS†	BS	BS	BS/MS	BS MS			BS	BS†	BS	BS	BS MS		BS†	BS†
Nutrition: See Dietetics																				
Occupational Therapy	12081																BS MS			
Oceanography	13191							BS									b			
Park Administration	21032											BS	b/m							
Philosophy	15091	BA	BA	BA	BA	BA	BA	BA	BA/MA	BA MA	BA	BA	BA	BA	BA/MA	BA/MA	BA MA		BA	
Philosophy and Religion	15992															BA				
Physical Education	08351	BS	BA/MA	BA/m	BA/MA	BS/MS	BS/MS	BA/MA	BA/MA	BA MA	BA/MA	BS/MS	BA BS MA		BA/MA	BA/MA	BS MA	BS MS	BA/MA	BA
Physical Science	19011	BS	BA/MA				BS	BS			BS		BA		BA	b	BA	BS		BA
Physical Therapy	12121				BS				BS		b									
Physics	19021	b	BA	BA	BA/MA BS/MS	BA	BA BS	BA/BS	BA/MA BS/MS	BA BS MS	BS/MS	BS	BA BS	BA/BS	BA/MA BS/MS	BA/MS	BA BS MS	BS	BA/BS	BA/BS
Physiology	04101				b		m		b						m	b/m				
Police Science: See Criminal Justice																				
Political Science	22071	BA	BA/MA	BA	BA/MA	BA MA	BA	BA	BA/MA	BA MA	BA/MA	BA	BA MA	BA	BA/MA	BA/MA	BA MA	BA	BA/MA	BA
Psychology* (See also Behav. Sci. and for Counseling, See Education)	20011	BA/MS*	BA/MA	BA/MA	BA/MA MS	BA/MA MS	BA/BS	BA/MA	BA/MA MS	BA MA MS	BA/MA		BA MA	BA/MA MS	BA/MA MS	BA/MA MS	BA/MA MS		BA/MA	BA/MA MS
. Clinical	20031	m		m	m	m	m		m					m		m	m			m
. College Teaching	20012															m				
. Developmental	20091															m				b
. Educational: See Education																				
. Industrial	20081						b		m							m	m			
. Physiological	20101															m				
. Research	20992								b							m				
. School	20013						m			m						m	m			m
. Social	20051															m				
Public Administration	21021	BA/MPA	BA/MPA	BS/MPA	BA/MPA	b MPA	b/MPA		b MPA	b MS	b/MPA	b	BS/MPA	b/MPA	BA/MPA	MPA	b MPA			b/MPA
Public Relations	05992			b	b	b m		b		b							BA			
Radiological and Health Physics	12251									b	b				MS					
Radio-Television (Telecommunications)	06031		b		BA/m	b m			BA	BA	BA/m	b			BS BA/MA	BA/MA	BA			

KEY TO SYMBOLS: BA, BS, MA, etc. — Bachelor of Arts, Bachelor of Science, Master of Arts, etc.; b — concentration within another bachelor's degree major; m — concentration within another master's degree major; (Note: Not all concentrations are listed).

†Program available only to upper division students possessing the R.N. All other programs admit both lower and upper division students.

*Most of the MS degrees in Psychology are Clinical Psychology only.